DRAFT ENVIRONMENTAL ASSESSMENT

EMERALD BIOFUELS, LLC,
NON-EDIBLE FATS, OILS & GREASE
BIO-REFINERY CAPABILITY DEVELOPMENT IN
PORT ARTHUR, JEFFERSON COUNTY, TEXAS

EXECUTED FOR:

DEPARTMENT OF DEFENSE TITLE III PROGRAM,
WRIGHT-PATTERSON AFB OH 45433

DATED
30 June 2015

EXECUTIVE SUMMARY

Emerald Biofuels LLC (Emerald) is planning to engineer, develop, finance, build and operate an Integrated Biofuels Production Enterprise (IBPE) that will transform renewable oils, such as inedible corn oil from ethanol plants, rendered fats, and waste greases, into a true diesel (not biodiesel) called Green Diesel™, with renewable naphtha and a renewable liquid petroleum gas as co-products (Proposed Action). The Proposed Action will use Honeywell-UOP Ecofining™ technology and can produce American Society for Testing and Materials D975 spec civilian on-road ultralow sulfur diesel or military spec F-76 marine diesel. Nameplate production capacity is about 86 million gallons per year of diesel.

Emerald is the recipient of a Phase I Technical Investment Agreement (TIA) under the Advanced Drop-In Biofuels Production Project with funding provided through multiple federal agencies and administered by the United States Air Force Defense Production Act Title III Program office located at Wright-Patterson Air Force Base in Dayton, Ohio. The purpose of Phase I is planning and preliminary engineering. If awarded a Phase II grant, compliance with the National Environmental Policy Act (NEPA) (42 United States Code §4321, et. seq.), Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations §1500-1508), and Department of Defense (DoD) Implementing Procedures is required.

Proposed Action and Alternatives

The DoD prepared this Environmental Assessment (EA) to comply with NEPA. The decision for DoD consideration presented in this EA is whether or not to provide financial support to implement the Proposed Action. The EA examines the potential environmental impacts associated with the Proposed Action and No-Action Alternative to determine whether the Proposed Action has the potential for significant environmental impacts. The information contained in the EA enables the DoD to fully consider the potential environmental impacts of issuing the Phase II grant for the Proposed Action.

The Proposed Action would produce up to approximately 6,702 barrels per day (98.5 million gallons per year) of Green Diesel™ using up to approximately 8,125 barrels per day (119.4 million gallons per year) of renewable biomass feedstock (animal fats, waste grease, and plant oils). These values represent an operating rate 20% above the nameplate capacity. The refining process would also generate three green fuel co-products: renewable naphtha, renewable liquefied petroleum gas, and a light ends gas (a fuel gas stream).

Because it will use domestically-available, renewable feedstocks, the Proposed Action will help reduce the nation's dependence on imported crude oil to supply its energy needs.

Further, substitution of Emerald's Green Diesel™ into the national fuel pool is expected to reduce greenhouse gas emissions by at least 1.11 million metric tons per year in equivalent carbon dioxide emissions compared to traditional fossil fuel diesel.

The Proposed Action requires access to between 10 to 25 acres for constructing the facility and supporting infrastructure which is dependent on ultimate system lay-out and pre-existing infrastructure. This proposed action will involve constructing on approximately 10.7 acres straddling an existing rail spur within the existing GT OmniPort (GTO) Industrial Park Facility (GTO Facility) (approximately 1,100 acres) near the city of Port Arthur, Jefferson County, Texas.

Construction of the IBPE main process facility and associated support infrastructure will occur on previously highly disturbed and developed land footprint formerly used as a polyethylene manufacturing site between 1951 and 2000. The facility involves constructing the refinery, office and necessary support facilities on 8.7 leased acres North of the rail spur and approximately 2 acres of GTO owned property that will include a raw and finished product storage tank farm South of the rail tracks. Above ground transfer lines will link the raw and finished facility and storage areas with sufficient height to not interfere with rail operations. An above ground raw and finished product pipelines mirroring existing below ground pipelines will be installed from this tank farm site into the existing barge dock and am existing tank farm also on the previously developed footprint. GTO facility's common utility, potable water and sanitary water, pipelines from Highway 73 into the complex will be located adjacent to the existing elevated industrial road on its right-of-way berms, also disturbed land.

A No-Action Alternative is also evaluated in this EA. The No-Action Alternative would result in the DoD not issuing the funding and developing the Proposed Action, which would forgo all impacts cited herein.

Prior to selecting the preferred GTO Facility site there were a number of other sites in multiple states considered but subsequently rejected, including one alternative site located within the GTO Facility, and approximately 1,700 feet away was considered. This alternative site consisted of disturbed, herbaceous pasture land. This alternative site was eliminated due to the presence of wetlands identified during a site evaluation. Construction at the location would have resulted in impacts to those wetlands and associated permitting requirements that would have exceeded DOD time constraints. Additionally, it was decided that siting the Proposed Action in the previously developed, former manufacturing area, minimizes construction impacts and allows for the use of infrastructure already in place. Therefore, it was determined that locating within the former manufacturing area, is the most viable site for the Proposed Action.

Summary of Resource Areas Examined

This EA evaluates the environmental effects that could result from implementing the Proposed Action and No-Action Alternative. As demonstrated in this EA, adverse environmental and community impacts resulting from the Proposed Action would be less than significant. Table ES.1 provides a summary of all impacts evaluated.

Table ES.1
SUMMARY OF IMPACTS BY RESOURCE

Resource Area	No-Action Alternative	Proposed Action
Air Quality	No new construction would take place and no new air emissions sources would be installed. There would be no adverse effect on air quality. However, there would be no benefit produced by green-house gas (GHG) emissions reduction.	Air quality impacts due to the Proposed Action would be minimal, a result of dust generation and diesel engines from construction equipment. BMPs would be implemented to minimize air quality impacts from construction activities. During operations, projected emissions from the IBPE would be non-major for Prevention of Significant Deterioration and Title V. The Proposed Action would be a minor source to be approved by TCEQ's PBR program. Emissions control equipment would be used to minimize emissions, resulting in minor emissions. The Proposed Action would result in a net reduction of GHG emissions of approximately 1.1 million metric tons per year of CO_2 compared to the No-Action Alternative (continued production of petroleum-based diesel).
Water Resources	There would be no change in existing surface or groundwater resources. There would be no impacts to floodplains in the surrounding area.	Footprint designed to avoid a groundwater aquafer. Shallowest usable aquafer is 800 feet below the site. Develop and implement BMPs to minimize surface hydrology impacts. The Proposed Action GTO sites are located within an area protected by a hurricane protection levee system with a Federal Emergency Management Agency designation indicating moderate risk of flooding. The proposed sites are on 500year floodplain. Local drainage systems are in place to minimize impacts. The GTO alternative site footprint has a larger footprint to include wetlands. Further site development requires US Army Corp of Engineers' regulatory oversight.

		Port Arthur municipal potable water and sanitary wastewater access on the Highway 73 frontage. Emergency firewater, as required, to be extracted from the Lower Neches Valley Authority (LNVA)'s Gulf Canal water adjacent to the sites. Applicable LNVA regulations will be addressed in TCEQ permits, and the resultant Stormwater pollution prevention plan (SWPPP) and spill prevention control and countermeasure (SPCC) plans.
Utilities and Infrastructure	There would be no change in existing conditions and utilities would not be used for the new facility. There would be no change in traffic patterns and no associated infrastructure would be added. There would be no change in existing conditions and drainage features would not be added or changed. There would be no change in existing conditions and no impacts to occupational and health safety would occur.	There are existing infrastructure and utility systems in place that minimize requirements to install new systems or modes. Construction of the Proposed Action will generate temporary traffic impacts due to the influx of construction workers entering and leaving the construction site. Operation of the Proposed Action will generate additional traffic due to operational activities and employees entering and leaving the facility. It is expected that minimal impacts will occur during facility operations.
Biological Resources	There would be minor changes in the existing conditions impacting its existing biological resources.	The preferred Proposed Action is fully located within an area previously developed for industrial use; no wetland habitat impacts. Both sites have extensive Bermuda grass, a biologically invasive plant species, covering all of the preferred location and most of the alternative site. Both have significant highly disturbed gravel fill layers from previous construction and site fill actions. The biological habitat for either site is not conducive to hosting endangered wildlife; the alternative site has a small North West corner within a 1,000 feet USFS colonial bird rookery limitation zone. The park proposes common above ground pipelines to and from the barge dock, established tank farm and the proposed tank farm on the previously highly disturbed footprint shadowing similar active underground pipelines. Approximately 100 feet of the proposed pipeline length is inside the 1,000 foot USFWS colonial bird rookery zone.

		Using LNVA water for intermittent fire-fighting and/or continuous operational process water source can impact Gulf Canal water levels and its wildlife.
Cultural Resources	There would be no change in existing conditions and no impacts to cultural resources.	No archeological resources or historic features or sites have been identified within the Proposed Action footprint; therefore, no cultural resources are expected to be impacted.
Land Use	There would be no change in existing land use conditions.	The Proposed Action is located within an existing industrially zoned area or poses conflict with future planned use. The sites were previously converted from agricultural purposes. (Chapter 7, Appendix A) The Proposed Action, when seen collectively with other projects, both existing and planned, in the area will not result in an adverse change in overall visual quality.
Geological Resources	There would be no or very minor change in existing geological conditions or soils.	Minor impacts to soils are anticipated.
Noise and Odor	There would be no change in existing noise level or odor.	Minor noise impact is expected in regard the Proposed Action. Construction noise would cause a temporary increase in ambient noise. Operational noise levels would not cross Occupational Safety and Health Administration thresholds. Minimal odors would accompany construction and tank blanketing would be used to minimize odors associated with operations.
Hazardous Material and Waste Streams	There would be no change to the site. No impacts would occur as a result hazardous materials or waste streams.	The Proposed Action would result in few by-products, all of which can be converted into easily disposable forms. The Proposed Action would be designed to minimize harmful discharges.
Socioeconomic Resources and Environmental Justice	There would be no change in existing conditions and no jobs would be created for construction or operation activities.	Depending on the proposed action's facility construction technique there may be temporary area increase in employment opportunities. Employing modular construction technique is preferred and can provide up to 150 short term jobs. Full operations will provide approximately 50 long-term jobs in the Beaumont-Port Arthur area with a 7.1% (Jan 2015) unemployment rate. The 2010 US Census statistical data shows Tract #116 (GTO site) has lower minority populations (13 vs 66%) than the city of Port Arthur proper with a higher median income. ($22,700 vs $17,834). Sub-poverty levels are less (15 vs. 26%). Census

Socioeconomic Resources and Environmental Justice (cont)		tracts adjacent to #116 have minority populations between 7 and 92%; median incomes between $17,900 and $26,300; and sub-poverty levels between 7 and 26%. No disproportionate impacts or adverse environmental consequences are expected due to the Proposed Action. In a zoned industrial park; nearest permanent residence over a mile away.

FINDINGS OF NO SIGNIFICANT IMPACT FOR AN INTEGRATED BIOFUELS PRODUCTION ENTERPRISE NEAR PORT ARTHUR, JEFFERSON COUNTY, TEXAS

DATE

Pursuant to the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), 40 Code of Federal Regulations (CFR) §1500-1508, Air Force's Environmental Impact Analysis Process (EIAP) regulations codified in 32 CFR §989, and Department of Defense Directive 6050.1, the Air Force has prepared this Environmental Assessment (EA) for determining and assessing potential natural and human environmental impacts associated with developing a commercial-scale Integrated Biofuels Production Enterprise (IBPE) capability at this location. This EA is incorporated by reference into this finding.

Background, Purpose and Need

The Defense Production Act (DPA) (50 Unites States Code App. §2061 *et seq.*) Title III Program is managed by the Office of the Secretary of Defense and executed by the DoD Executive Agent Program Office, a component of the Manufacturing and Industrial Technologies Division (AFRL/RXM) of the Materials and Manufacturing Directorate, Air Force Research Laboratory. As the Executive Agent for the DoD's DPA Title III Program, the Air Force is responsible for executing programs that ensure domestic production capability for technology items that are essential to national defense.

In accordance with DPA Section 303(a)(5), on 8 Jan 2013 a Presidential Determination (PD) was signed establishing the Advanced Drop-in Biofuels Production Program (ADBPP). The PD asserted that the Department's reliance on "…crude oil derived fuels undermine foreign policy objectives and impact the Nation's trade imbalance…" and that "…advanced biomass-derived transportation fuels that use a domestic, renewable feedstock provide a secure alternative that reduces the risks associated with dependence on petroleum sources."

The Air Force DPA Title III Program is therefore interested in establishing the commercial-scale manufacture and supply of drop-in replacement biofuels for aviation and marine diesel applications. The DoD has indicated that it intends to purchase drop-in replacement biofuels that meet approved specifications, meet the provisions of the Energy Independence and Security Act Section 526, are a "drop in fuel" that can utilize existing

infrastructure, are deliverable to the DoD fully blended with conventional petroleum product counterparts JP-5, JP-8, and/or F-76, and are ready for use.

The purpose of the Proposed Action is the design, construction and/or retrofit, validation, qualification and operation of a domestic commercial-scale IBPE that meets a requirement of at least 10 million gallons per year of neat (100% pure, unblended) renewable diesel production capability. The IBPE will be capable of producing drop-in liquid transportation fuels targeted for military operational use, and as such, must be approved and certified MILSPEC JP-5, JP-8, and/or F-76 equivalents by the time the IBPE becomes operational.

Description of Proposed Action

Under the Proposed Action, Emerald Biofuels, LLC (Emerald), as an awardee under Phase 1 of the ADBPP, intends to construct and operate an inedible oil feedstock IBPE. Emerald plans to lease the property and renewable diesel refinery infrastructure from the GTO Industrial Park. DoD Title III funds will be used primarily to purchase refinery equipment. The site will contain a renewable diesel refining capability that uses Honeywell-UOP Ecofining ™ technology. GTO- will lease approximately 8.7 acres in Jefferson County Texas, to Emerald. The industrial park and proposed construction site sits partially within and adjacent to the city limits of Port Arthur Texas.

The proposed refinery feedstock is composed of animal fats (tallow), plant-based oils and greases. The feedstocks will be transported via various pre-existing transportation modes from agricultural operations in Southern and Mid-Western states to Port Arthur for processing at the facility. The resulting renewable diesel will be off-loaded to petroleum refiners and blenders in the Port Arthur area prior for distribution to the ultimate fuel customers, including the US military.

The renewable diesel refinery is being designed to convert nearly 100 million tons of biological feedstocks per year into approximately 86 million gallons of renewable diesel and 13 million gallons of refined co-products (i.e., naptha, liquefied petroleum (LP) gas, lean gas and soapstocks) annually.

The Proposed Action site is on Industrial park-owned and previously disturbed property where a chemical production facility was located. The production facility was decommissioned and torn down in around 2001. The site was cleaned to existing Texas Environmental Quality Standards and suitable for industrial re-use. The industrial park has significant infrastructure in place that will be reutilized, including: railroad lines, industrial roads, city utilities to include electricity, water and sewer hook-ups, Hydrogen and other pipelines underlying the industrial park, surface industrial water, and a barge pier. Design features such as standard operating procedures and best management practices can be found in the EA.

The renewable diesel refinery would be located within an existing industrial park. The Texas Parks' J.D. Murphree State Wildlife Management Area is approximately 1.2 miles west and upstream of the proposed construction site. The Big Hill Wildlife Management Area is roughly

across the Taylor Bayou from the industrial park. There are single family residences located approximately a mile away from the proposed construction site and physically separated by the Tiger Bayou.

There are no cultural or historical properties impacted by this Proposed Action. Construction and operations will not impact prime Texas farmland. The site has significant surface waters in the area. The proposed surface water permitted withdraw levels will not impact its quality or availability. Used potable and industrial waters will be collected and sent to the sanitary sewer system. The site does not contain unique vegetation, wildlife species, or fishery resources. No special management areas are within the vicinity of the facility. Impacts of facility emissions would not cause or contribute to exceedance of any established ambient air quality standard for the region. While there is potential to contaminate ground and surface waters, there will be no direct discharge to existing surface or ground waters. Emerald plans to develop Best Management Practices (BMPs) and Spill Prevention, Control and Countermeasures (SPCC) plans for its construction and operations. Storm water and ground water discharge permits are required. Removal of approximately 10.7 acres of non-native grassland vegetation and degraded wildlife habitat in a previously highly disturbed area is planned with this preferred site development. Protective measures that limit habitat removed and disturbance during migratory and nesting periods would be implemented. No known historical properties or cultural resources are located on the optional sites due to its past extensive disturbance and previously lowland origination (Chapter 7, Appendix F). If undiscovered historic properties or cultural resources are found, work will cease pending consultation with Tribes and State Historic Preservation Officer. The site is a former industrial park and its anticipated land use and ownership remains unchanged with this action.

The site's Eastern and Southern visual skylines are predominately covered with petroleum-chemical facilities and related infrastructures. So the propose action will not significantly change the view-shed. There is not expected to be adverse impacts to the geology and soils at the site due to its extensive disturbance previously. The nearest non-industrial neighbors are more than a mile away and the construction and operational noise and odor levels are anticipated to cause minimal impacts. The IBPE plans to use existing industrial roads, infrastructure, and utilities already on the site. Local employment will likely be increased during construction and operations which will improve the socioeconomic benefits to the Port Arthur area. There are not expected to be environmental justice concerns related to this facility's construction or operations. The final refinery facility designs will be compliant to all federal, state and local regulatory requirements.

Cumulative Analysis and Best Management Practices

GT-Omniport Industrial park is approximately 1,100 acres of property southeast of Port Arthur Texas. Portions of the acreage previously contained a polymer production facility, which has been disassembled. The park has significant industrial infrastructure already in place with access to major State highways, two railroads, a pier and existing pipelines. The proposed refinery designs

will utilize these existing resources. GT-Omniport plans to continue improving and developing the site's infrastructure to make the location into a petrochemical related logistical and storage complex. The Proposed Action is to develop approximately 10.7 acres into a renewable diesel refinery and associated infrastructure. The development will remove a small fraction of the overall cumulative vegetation and wildlife area. The area and region air quality standards are currently compliant. Stationary air emission sources will be permitted to prevent construction and operational emissions from exceeding applicable thresholds. The Texas Land Office agrees the intended action does not impact coastal natural resources. Existing petroleum-chemical operations are a major employer in the area and heavily clustered east and south of this proposed action leading to minimal visual characteristic degradation of the area. Emerald plans to develop site specific and operational BMPs as site layout, engineering specifications, and operational procedures are finalized.

Public Notice

Notices were published on: XX and XX Month 2015 in the Port Arthur Texas News and Beaumont Enterprise. Copies of the draft final EA were available at numerous locations including at the Port Arthur and Beaumont public libraries, and on the Defense Production Act Title III's (http://www.dpatitle3.com) and the AFRL/RX's public websites (http://www.wpafb.af.mil/afrl/rx/). XXX comments were received and resolved.

Findings of No Significant Impacts (FONSI)

Based upon my review of the facts and analyses contained in the attached EA, I find the Proposed Action consisting of designing, constructing, installing, operating and future disposition of a commercial Integrated Biofuel Production Enterprise will not have a significant impact on the natural and human environment; therefore, an environmental impact statement is not required for this action. This analysis fulfills NEPA requirements, CEQ regulations 40 CFR §1500-1508, and the Air Force EIAP regulations 32 CFR §989.

_____
Date

XX, Colonel, USAF, P.E.
Command Civil Engineer

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CHAPTER 1
PURPOSE OF AND NEED FOR ACTION

In this chapter there are five sections which detail and document the proposed effort: 1) the reason and background for the proposed federal action; 2) purpose and scope of the federal government's decision in the proposed action; 3) the scope of the environmental review; 4) public participation, coordination and regulatory permitting requirements; and 5) document organization.

1.1 PURPOSE, NEED, AND BACKGROUND

The Proposed Action is being conducted to support the Advanced Drop-In Biofuels Production Program (ADBPP). The purpose of the ADPP is to establish a commercial-scale manufacture and supply of drop-in replacement biofuels for aviation and marine diesel applications. The purpose of the Proposed Action evaluated in this EA is to establish a domestic commercial-scale Integrated Biofuels Production Enterprise (IBPE) capability at one or more locations. The fuels produced must be biomass-derived transportation fuels from renewable feedstocks and meet the JP-5, JP-8, and/or F-76 fuel specifications.

The need for the Proposed Action is to provide the DoD with a secure transportation energy alternative that reduces the risks associated with dependence on petroleum resources in accordance with the Defense Production Act. The ADBPP is being executed under the authority of the Defense Production Act, Title III.

The Defense Production Act (DPA) (50 United States Code (USC) App. §2601 et al) Title III Program is managed by the Office of the Secretary of Defense and executed by the DoD Executive Agent Program Office, a component of the Manufacturing and Industrial Technologies Division of the Materials and Manufacturing Directorate, Air Force Research Laboratory. As the Executive Agent for the DoD's DPA Title III Program, the Air Force (AF) is responsible for executing programs that ensure domestic production capability for technology items that are essential to national defense.

In accordance with Section 303(a)(5) of the DPA, on 8 Jan 2013 a Presidential Determination (PD) was signed establishing the ADBPP. The PD asserted that the Department's reliance on "…crude oil derived fuels undermine foreign policy objectives and impact the Nation's trade imbalance" and that "…advanced biomass-derived transportation fuels that use a domestic, renewable feedstock provide a secure alternative that reduces the risks associated with dependence on petroleum sources."

The DoD has indicated that it intends to purchase drop-in replacement biofuels for component services requirements. Suitable biofuels shall meet approved product specifications, meet the provisions of the Energy Independence and Security Act (EISA) Section 526, be a "drop-in fuel" that can utilize existing infrastructure, and be deliverable to the DoD fuel supply system fully blended with conventional petroleum product counterparts JP-5, JP-8 or F-76.

The Emerald Biofuels (Emerald) LLC, under Phase I of the ADBPP, intends to construct an IBPE for the production of neat (or 100% pure, unblended) biofuels from inedible oils using Honeywell-UOP Ecofining^{TM} technology.

1.2 DECISION TO BE MADE

This EA evaluates the potential environmental consequences of the federal government assisting in the establishment of a commercially viable biofuel production capability. Decisions to be made will include whether or not to fund and implement the ADBPP project. NEPA, through its implementing regulations, requires federal agencies to document, analyze, and review proposed actions and potential reasonable alternatives. These actions, their impacts to resources and corresponding risks are assessed and analyzed using established AF guidance.

1.3 SCOPE OF THE ENVIRONMENTAL REVIEW

NEPA requires Federal agencies to consider environmental consequences in their decision-making process. The President's Council on Environmental Quality (CEQ) has issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental impact analysis. The Air Force Environmental Impact Analysis Process (EIAP) is accomplished through adherence to the procedures set forth in CEQ regulations (40 Code of Federal Regulations (CFR) §1500-1508), DoD Instruction 4715.9 Environmental Planning and Analysis, and 32 CFR §989 (Environmental Impact Analysis Process), 15 July 1999, as amended. These Federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action.

Through the Intergovernmental and Interagency Coordination for Environmental Planning (IICEP), requests have been made for information on planned actions in the surrounding community. If any concurrent actions are identified during the EA process, they will be examined only in the context of potential cumulative impacts. A cumulative impact, as defined by the CEQ (40 CFR §1508.7), is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (Federal or non-Federal) or person undertakes such

actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

Both potential GTO sites require access to potable and process waters and generate wastewater discharge pipelines. There is significant pre-existing installation infrastructure including pre-existing tank farm, rail lines, utility and Hydrogen lines, and a barge dock that transect or involve GTO common property for their tenant's utilization. Not all maps are completely document all existing industrial park infrastructure resources; but when absent it's incorporated through reference.

Geology, Land Use and Socioeconomic Resources and Environmental Justice resources are not addressed in detail due to the determination that these resources are not affected by the proposed or alternative action and therefore eliminated from further study in this document.

1.4 PUBLIC PARTICIPATION, COORDINATION AND REGULATORY PERMITTING REQUIREMENTS

This EA was prepared in compliance with AF NEPA regulations. The following paragraphs describe the laws and regulations that apply or may apply to the proposed and alternative actions.

1.4.1 Interagency and Intergovernmental Coordination

Federal, state, and local agencies with jurisdiction that could be affected by the proposed or alternative actions have been notified and consulted. This coordination fulfills the Interagency Coordination Act and Executive Order (EO) 12372 *Intergovernmental Review of Federal Programs* (14 July 1982), which requires Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. A complete listing of the agencies consulted is found in Chapter 5; related correspondence and responses are included in Chapter 7.

1.4.2 Permits

The following list contains all known permits or approvals required for the Proposed Action:

- Air Permit issued by the Texas Commission on Environmental Quality (TCEQ). Under state and federal law, air permits are typically "pre-construction" permits, meaning that a permit approval must be issued by the appropriate agency before major equipment purchases or construction may begin. Because of the relatively low projected air emission rates and other factors, the Proposed Action qualifies for the Permit by Rule (PBR) program with TCEQ. Under the PBR, many permitting requirements are eliminated or simplified, including the requirement for public comment and permit review and issuance time. The TCEQ PBR application will be submitted prior to construction.

- Construction Stormwater Permit issued by the TCEQ under the Texas Pollutants Discharge and Elimination System (TPDES). As the Proposed Action will disturb more than five acres of land during construction, it is considered to be a large construction activity which requires submittal of a Notice of Intent. Coverage will be obtained under TPDES's Construction General Permit No. TXR150000. Obtaining such coverage is common, quick and noncontroversial, and will require implementation of best management practices (BMPs) to minimize the impact of construction activities on stormwater quality.

- Industrial Stormwater General Permit issued by the TCEQ. Once in operation, coverage will be obtained under the TPDES Industrial Multi-Sector General Permit No. TXR05V084. Coverage under this general permit will require implementation of certain BMPs to minimize impacts to stormwater runoff from its site.

- Wastewater Discharge Permit issued by the City of Port Arthur. This permit will be obtained before beginning discharge. This permit is not a preconstruction permit, in that construction may begin before the permit is obtained. This permit will be obtained by commencement of operation (and wastewater discharge to the City of Port Arthur).

- Potable Water Withdrawal from the City of Port Arthur. The Proposed Action will use roughly 400 gallons per minute (gpm) potable water for the refinery's operations. An existing city water line within the existing GT Omniport (GTO) Industrial Park Facility (GTO Facility) to meet the facility's operational requirements. As with the Wastewater Discharge Permit, a permit will be obtained from the City of Port Arthur to connect to prior to making the connection. This permit is not a precondition to commencing construction.

- Industrial Water Withdrawal Permit from the Lower Neches Valley Authority (LNVA). Process water supply for the Proposed Action will come from the Gulf Canal that crosses the existing GTO Facility. This canal was constructed for industrial water supply purposes in the area. It will provide the IBPE complex with emergency firewater. This permit is not a precondition to commencing construction.

- Hydrogen supply – A hydrogen supply contract with one or more of the three industrial hydrogen supply companies having hydrogen pipelines located on the northeast border of the existing GTO Facility will be secured. Once the supply contract(s) is/are negotiated, an approval to connect to the pipeline(s) will be obtained.

1.4.3 Other Regulatory Requirements

The EA considers all applicable laws and regulations, including but not limited to the following:

- *Clean Air Act*, as amended (42 USC §7401 *et seq.*)
- EO 11990, *Protection of Wetlands (*24 May *1977*)
- *Clean Water Act* (33 USC §1251 *et seq.*), including Section 404 (33 USC §1344)
- EO 11988, *Floodplain Management* (24 May 1977)
- *Endangered Species Act* (16 USC §1531-1542)
- *Pollution Prevention Act* (42 USC §§13101-13102 *et seq.*)
- *National Historic Preservation Act* (16 USC §470 *et seq.*)
- *Protection of Historic Properties* (36 CFR Part 800)
- *Resource Conservation and Recovery Act* (42 USC §6901 *et seq.*)
- *Toxic Substance Control Act* (15 USC §2601 *et seq.*)
- *Comprehensive Environmental Response, Compensation, and Liability Act* (42 USC §9601 *et al.*)
- *Superfund Amendments and Reauthorization Act* (42 USC §9601 *et seq.*)
- *Emergency Planning and Community Right-to-Know Act* (42 USC §11000 *et seq.*)
- EO 12580, *Superfund Implementation* (23 January 1987)
- *Occupation Safety and Health Act* (29 USC §651 *et seq.*)
- *Energy Independence and Security Act* (EISA) (Public Law 110-140)
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (11 February 1994)
- *Oil Petroleum Act* (40 CFR Part 112)

1.5 DOCUMENT ORGANIZATION

This EA is organized into seven chapters.

Chapter 1 Contains the purpose of and need for action, the overview and background of the government's requirement, identification of the decision to be made, a summary of the scope of the environmental review, identification of applicable regulatory requirements, and a summary of the document organization.

Chapter 2 Describes the history of the formulation of alternatives, identifies alternatives eliminated from further consideration, provides a detailed description of the Proposed Action, describes the Alternatives and the No-Action Alternative, summarizes other actions announced for the project sites and the surrounding community, provides a comparison matrix of environmental effects for all

alternatives, identifies the preferred alternative, and describes measures to minimize or reduce impacts.

Chapter 3 Documents the current site's natural, cultural, and historical resource. This section documents the comparison between the current resource baseline and the proposed future state through a detailed resource impact review, evaluation, analysis and assessment. This section also addresses cumulative, irreversible and irretrievable resource development impacts. (40 CFR §1502.15 & §1502.16).

Chapter 4 Lists document preparers.

Chapter 5 Lists persons and agencies consulted in the EA scoping and preparation process.

Chapter 6 Glossary and Acronyms

Chapter 7 Lists source documents relevant to EA preparation to include: stakeholder and public comments received and resultant resolution matrix, location for relevant EA execution and support documents (i.e., formal public meeting minutes, Department of Agriculture Form 1006, newspaper EA announcements, formal regulator responses, etc.).

Chapter 8 References

CHAPTER 2
DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This chapter has multiple parts providing documentation and discussion on the proposed project's physical location, characteristics, and why the proposed action is preferred. As stated in 32 CFR §989.8, "The Air Force must analyze reasonable alternatives to the proposed action and the "no action" alternative in all EAs and EISs, as fully as the proposed action alternative." This chapter includes a description of the Proposed Action (Section 2.3), alternatives considered but eliminated (Section 2.4) and the No-Action Alternative (Section 2.5).

2.2 PROPOSED ACTION

Emerald Biofuels LLC (Emerald) proposes to plan, design, construct and operate a commercial-scale renewable diesel production facility (Proposed Action) at the existing GT OmniPort (GTO) Industrial Park Facility (GTO Facility) located near the city of Port Arthur, Jefferson County, Texas (Figures 2-1, 2-2, and 2-3). The proposed IBPE structures are required to comply with the Texas' Department of Insurance Inland (I) zone requirements, 120 mph, 3-second gust wind speed, applicable for the GTO site.

The facility plans to use Honeywell-UOP Ecofining™ technology to convert renewable oils such as inedible corn oil or used cooking oil into high quality renewable American Society for Testing and Materials (ASTM) D-975 Geen Diesel™ which defines civilian on-road ultralow sulfur diesel; or renewable F-76 marine diesel, which is a military grade diesel fuel.

The facility will also produce secondary co-products (naphtha, liquid petroleum gas (LPG), and lean gas).

The proposed facility's nameplate capacity, or the minimum production levels expected during routine operations, will be approximately 86 million gallons per year (mgy) of diesel and approximately 13 mgy of co-products (naphtha, liquid petroleum gas (LPG), and lean gas) produced from approximately 100 mgy of renewable feedstocks.

2.2.1 New Infrastructure Requirements

A portion of the proposed GT Omniport site was previously used as a polyethylene production plant starting in about 1950 and ended operations approximately 2001 and has been subsequently demolished and cleaned up. The current site owner plans to install certain logistics infrastructure components and further develop the industrial park into a petrochemical and logistical industrial

park, and will lease common infrastructure to tenants, including Emerald's proposed action. They plan to support tenants through supplying common infrastructure components including: utilities, security, bulk feedstock and product tankage, logistical infrastructure for barge and rail unloading and piping and pumps appurtenant to these items. GTO Facility management views itself as a terminal operator and insists on owning and operating terminal-like assets.

To develop this proposed capability, the following infrastructure will need to be built on or near the proposed site to execute the proposed IBPE operational, regulatory and logistical requirements:

Table 2-1 INBOUND FEEDSTOCK TANKS

ID	BARRELS	GALLONS	DAYS	MATERIAL	TYPE	MATL OF CONST
BULK RAW						
T-11001	50,000	2,100,000	7.3	FEEDSTOCK	ATM	CS
T-11002	50,000	2,100,000	7.3	FEEDSTOCK	ATM	CS
T-11003	50,000	2,100,000	7.3	FEEDSTOCK	ATM	CS
BULK DAYTANK						
13001	9,194	386,148	1.35	FEEDSTOCK	ATM	304 SS
13002	9,194	386,148	1.35	FEEDSTOCK	ATM	305 SS
PRETREATED DAYTANK (QUALITY CHECK)						
T-13003	9,194	386,148	1.35	FEEDSTOCK	ATM	304 SS
T-13004	9,194	386,148	1.35	FEEDSTOCK	ATM	304 SS
T-13005	9,194	386,148	1.35	FEEDSTOCK	ATM	304 SS
PRETREATED, BLENDED PROCESS FEED						
T-12001	13,213	554,946	1.94	FEEDSTOCK	ATM	304 SS
T-12002	13,213	554,946	1.94	FEEDSTOCK	ATM	304 SS
T-12003	13,213	554,946	1.94	FEEDSTOCK	ATM	304 SS
T-12004	13,213	554,946	1.94	FEEDSTOCK	ATM	304 SS

CS – Carbon Steel; SS – Stainless Steel; ATM- vented Stationary roof;

Table 2-2 FINAL PRODUCT AND PROCESS MATERIALS TANKS

ID	BARRELS	GALLONS	DAYS	MATERIAL	TYPE	MATL OF CONST
PRODUCT BULK STORAGE						
T-20001	50,000	2,100,000	9.0	Diesel	ATM	CS
T-20002	50,000	2,100,000	9.0	Diesel	ATM	CS
T-20003*	10,622	446,124	25.5	Naphtha	FLOAT	CS
T-20004	2,143	90,000	3.2	Propane	BULLET	CS
STARTUP/SHUTDOWN/PRODUCT QC TANKS						
T-12005	10,312	433,104	1.7	Diesel	ATM	304 SS
T-12006	10,312	433,104	1.7	Diesel/Process Intermediate	ATM	304 SS

ID	BARRELS	GALLONS	DAYS	MATERIAL	TYPE	MATL OF CONST
OTHER LIQUIDS						
T-13018	136	5,700	19.7	Caustic (50% NaOH)	ATM	CS
T-13017	136	5,700	28.1	Phosphoric Acid (75%)	ATM	304 SS
N/A	167	7,000	13.1	DMDS	ATM	CS
N/A	136	5,700	18.4	Iron Chelate – Sulfur Control	ATM	CS
TOTE	TOTE	TOTE	37.1	DEA – Amine	ATM	CS
T-13020	1,096.07	43,035	2	Soapstock/Gums	ATM	304L SS
SOLID BINS						
T-13027	641	26,928	60	Silica	BIN	CS
T-13025	641	26,928	49	Clay	BIN	CS
T-13026	641	26,928	21	DE	BIN	CS
N/A	20	N/A	8.4	Spent Clay	ROLLOFF	CS
N/A	20	N/A	2.2	Recovered Sulfur	ROLLOFF	CS

Float – floating roof; Bullet- traditional propane tank; CS – Carbon Steel; SS – Stainless Steel; *- an existing GTO tank being provided for Emerald's use

2.2.2 Introduced Production Materials

The estimated material requirements that will be required for meeting the facility's nameplate capacity are shown below:

Table 2-3 BOUNDING CASE PROCESS DESIGN BASIS

Raw Material or Feed	Daily Throughput	Annual Throughput
Raw Material (fats and oils)	8,125 barrels	2,843,750 barrels
Hydrogen	19.06 MMSCF	6,670 MMSCF
Bleaching Earth	4,821 ponds	844 tons
Hydrated Silica	3,857 ponds	675 tons
Filter Aid	1,080 ponds	189 tons
Phosphoric Acid (85%)	1,575 ponds	276 tons
Caustic (50%)	3,313 ponds	580 tons
Dimethyl disulfide (DMDS)	639 gallons	223,776 gallons
Ecofining (Intermediate) Feed	7,800 barrels	2,730,000 barrels

Product	Daily Throughput	Annual Throughput
Green Diesel™ Product	6,702 barrels	2,345,700 barrels
Naphtha	1,037 barrels	362,880 barrels
LPG	797 barrels	278,880 barrels
Lean Gas	0.64 MMSCF	223 MMSCF
Sulfur	1.9 tons	665.7 tons
Wet Gums	9,266 gallons	3,243,100 gallons

MMSCF – Million standard cubic feet

2.3 SELECTION STANDARDS

2.3.1 Title III Program Objectives

ADBPP contractors must develop a project site that meets the following Programmatic objectives:

1. The IBPE will achieve economic viability, through stable and economic feedstock supplies, operational efficiencies, and viable product markets, by the end of the technical period of performance.
2. The IBPE will be constructed within 3 years of the Phase 1 agreement award and demonstrate full-scale production capability within 4 years of the Phase 1 agreement award.

The following are site selection criteria related to these objectives:

1. Minimize natural and human environmental impacts;
2. Have appropriate zoning for the construction/operation of an IBPE and sufficient distance from non-compatible zoning: residential, commercial, public parks and non-industrial areas;
3. Be located in a commercially-viable location;
4. Have proximity to required resources and/or markets;
5. Have access to required skilled workforce;
6. Have access to multi-modal transportation infrastructure; and
7. Allow for development within the time frame necessary to meet the Program objectives.

ADBPP contractors must design, construct and/or retrofit, validate, qualify and operate a domestic commercial-scale IBPE that meets the following requirements:

1. Biofuel must be produced domestically.
2. Biofuel must comply with EISA Section 526.
3. Biofuel must come from an acceptable feedstock:
    a. Compliant with "renewable biomass" as defined in Section 103 of the Federal Land Policy and Management Act of 1976 (43 USC §1702) that:
        1. Uses forest byproducts that are removed as a preventative treatment to: reduce forest fire fuel and risk, reduce or contain disease or insect infestation, or restore ecosystem health;
        2. Otherwise used for higher-value products; and
        3. Harvested in accordance with applicable law and land management plans and required for old growth maintenance, restoration and management in accordance with Section 102 sub-section (e) paragraphs 2 through 4 and the large tree retention sub-section (f) of the Health Forest Restoration Act (16 USC §6512).
    b. Renewable or recurring organic matter originating from non-Federal or Indian tribal lands held in a Federal trust or subject to restrictions against alienation imposed by the U.S. including:
        1. Renewable organic plant material to include trees, algae, or other micro-organisms grown for the specific purpose of converting into energy; and
        2. Waste materials including crop residues (including cobs, stover, bagasse and other residues); vegetative waste (including wood wastes and residues); animal waste and by-products (including oils, fats, greases and manure); and food or yard wastes.
    c. Biomass comprised predominately of organic fraction from MSW or sewage sludge (bio-solids).
    d. A facility that currently plans to add capacity or transition from traditional feedstocks (i.e. corn starch, cane derived sugars, sugar beets or sorghum and oils derived from soybeans, canola, sunflower, peanut, or other oils derived from corn or Dried Distiller Grains with soluble, or feedstock materials used in the food or feed production) to an approved alternative feedstock.
4. The biofuels must be drop-in replacement suitable for military operational use.
5. The IBPE must have a rated capacity at least 10 mgy of neat biofuel.
6. The contractor must commit to certain AF business requirements including cost share and construction contingency reserve requirements.

Contractors to the ADBPP Program can employ various combinations of feedstocks and conversion technologies to produce biofuels, and can choose a project site at any location determined to have appropriate access to feedstocks and other facility requirements that meet the objectives and requirements listed above.

2.3.2 Site Specific Criteria Requirements

In addition to the site selection criteria identified in Section 2.3, further criteria for siting that is specific to Emerald's planned technology and design is necessary. Based on a preliminary technology design and layout of project components, the Proposed Action requires approximately 10 to 25 acres of land to construct. Usable industrial park common infrastructure siting near or within an existing facility and available for use by Emerald reduces the acreage of land needed to satisfy the design and layout of project components. In addition to land requirements, other siting criteria include:

1. Transportation Logistics;
2. Hydrogen Supply;
3. Industrial Zoning; and
4. Infrastructure Availability.

The Proposed Action will require the annual movement of about 200 mgy of feedstock and final products in and out of the proposed IBPE facility. As the majority of the raw and finished products are expected to be transported by rail and river barges, currently this is estimated at 7,300 railcar or 500 river barge shipments per year. Refinery operational supplies and any local feed or finished stock distribution would be through local trucking which is estimated at approximately 1,500 trucks per year. Commercially viable operations require a strategic location that supports efficient, economic logistics, including a barge dock, rail infrastructure and a reasonably close highway. The proposed IBPE facility should be located in the Gulf of Mexico refinery corridor to be near customers and pipelines affording the most off-take flexibility.

A second major siting factor for the Proposed Action is the presence of a hydrogen supply. The process will use a considerable amount of hydrogen to transform the feedstock into finished product. There are two ways to obtain hydrogen – produce it or purchase it. Siting in the Gulf of Mexico region affords Emerald access to the regional Hydrogen pipeline system that also supports petroleum refineries and chemical plants.

A brief discussion relating to other potential sites and the down select results can be found in section 2.5.

2.3.3 Technology for the Proposed Action

Emerald is a project developer and has not developed any proprietary technology. As such, it must license commercially available renewable fuel production technology from a technology provider. Honeywell-UOP Ecofining^{TM} technology producing Green Diesel^{TM} (also called renewable diesel) was selected for multiple reasons. Among these:

1. It produces superior quality, fully fungible diesel fuel.
2. It is the most capital-efficient technology among those technologies that are capable of producing superior quality, fully fungible renewable diesel fuel.
3. The Honeywell-UOP Ecofining™ technology is proven on a commercial scale even larger than that proposed by Emerald.

Figure 2-1 VICINITY MAP

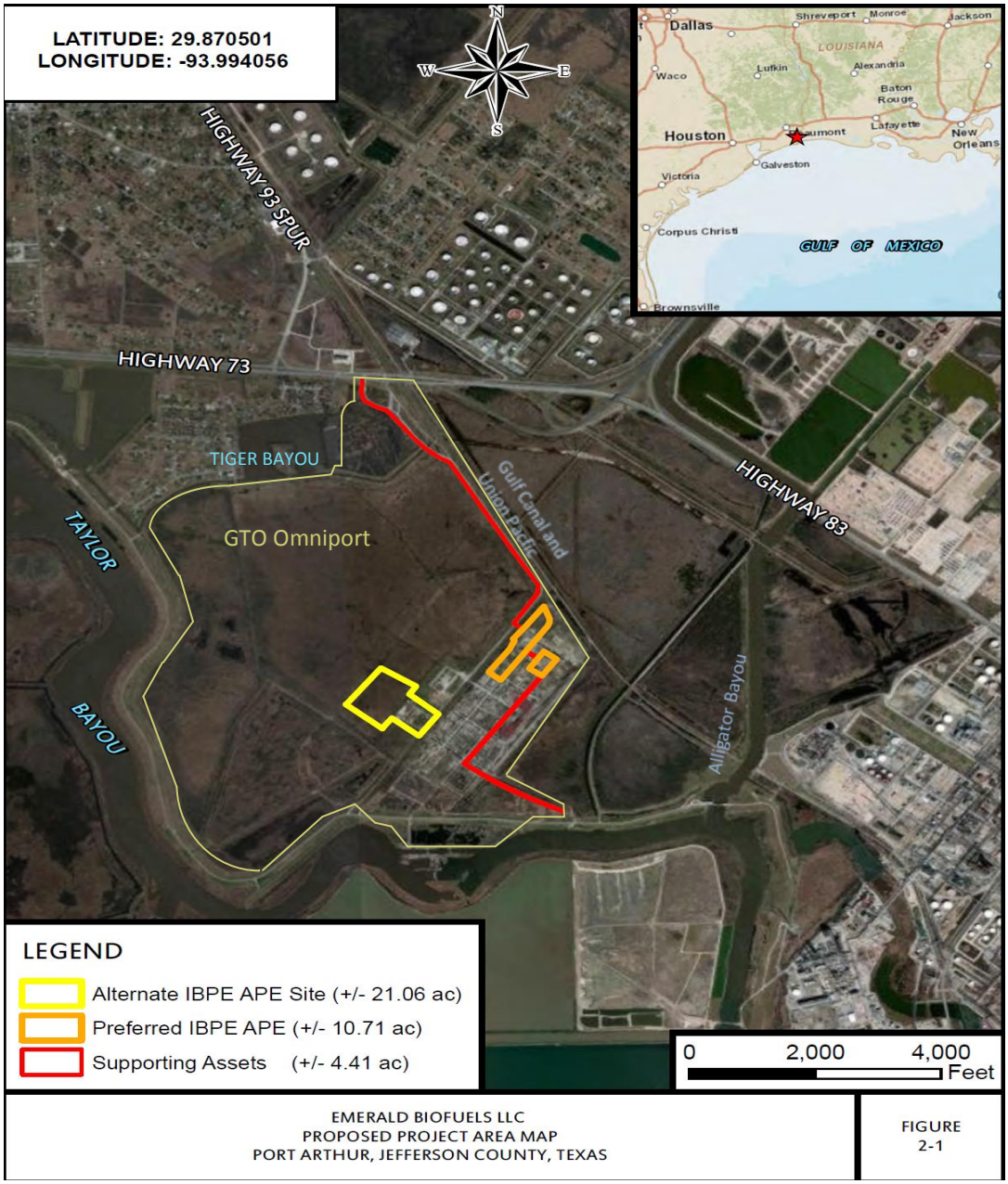


Figure 2-2 PROPOSED ACTION – SITE DETAILS

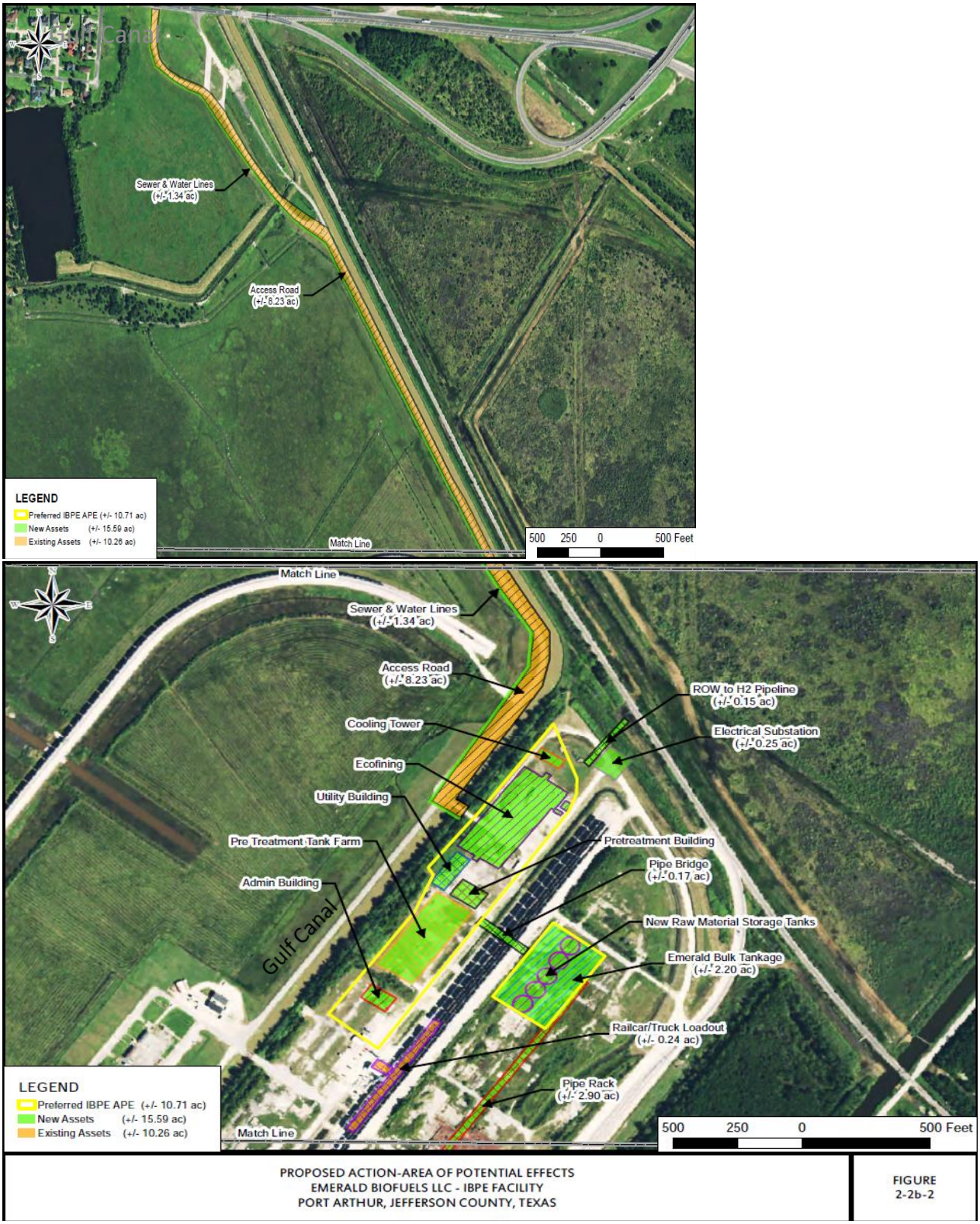


Figure 2-2 PROPOSED ACTION – SITE DETAILS (continued)

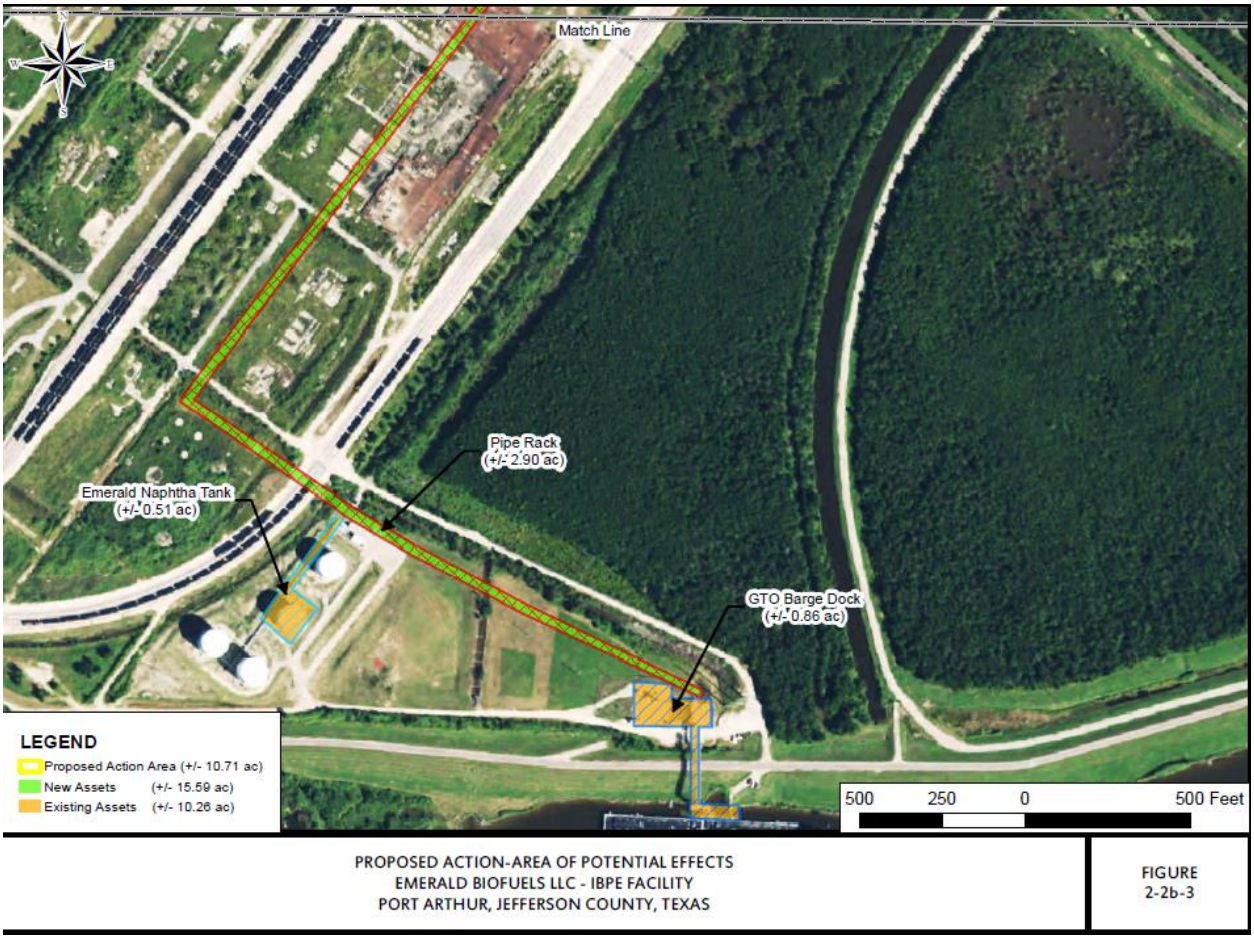


Figure 2-3 PROPOSED FACILITY AND INFRASTRUCTURE FOOTPRINT

Note: Battery limits reflect the previous facility's historical footprint, in Appendix F.

Figure 2-4 SITE PHOTOGRAPHS

Representative site photo for the Proposed Action site today

Representative site photo for the Proposed Action site today

2.3.4 Technology Description

- **Pretreatment Process & Support Infrastructure**

Incoming feedstock (e.g., animal fats and waste grease) must meet certain Honeywell-UOP-specified contaminant criteria, such as phosphorus and other elements that could interfere with the hydrotreating and isomerization catalysts of the Ecofining unit. The basic steps in the pre-treatment process are:

Clarification (if required);
Degumming/modified caustic refining;
Water washing; and
Bleaching

The industrial process follows the following steps. The raw materials are placed in a clarifying centrifuge to separate and remove non-oil/fat components such as suspended solids and free moisture. The resultant raw feedstock then undergoes a combination de-gumming/modified caustic refining operation. Using in succession phosphoric acid, a caustic neutralization solution and high speed centrifugal agitation insoluble phosolipids (fat molecules) in the oil separate out the metal precipitates, insolubilized gums, soapstock and other impurities. Softened water is then mixed with into the oil containing phospholipids and centrifugally separated washing away any remaining water soluble impurities. Bleaching clay and hydrated silica are added to remove all remaining organic based impurities. The remaining degummed oil is combined with silica and clay in separate agitated vessels and subject to a vacuum to dry any remaining moisture. The oil is then filtered through diatomaceous earth to remove filterable impurities. The remaining solution is then sent to storage for further processing.

Support infrastructure includes raw material receiving and storage, product storage, two boilers to produce steam and a cooling tower. As feedstock is received by barge, rail or truck, it must be stored prior to use. Emerald plans to have about 15 days of raw feedstock bulk storage (at nameplate operating rate) and a similar amount of storage for Green Diesel™, naphtha, and LPG.

The boilers will burn either lean gas from the process or natural gas to produce steam to use in the process. The cooling tower water removes process heat.

Emerald's feedstock pretreatment process uses established vegetable oil refining technology and as a result environmental concerns are well-known. First, the process handles relatively benign materials. Vegetable oils and animal fats are nontoxic. They have very low vapor pressures, so they do not tend to vaporize and contribute to air pollution. A nitrogen-blanket covers its feedstock storage tanks to minimize the potential

for moisture entering the system and prevent degradation of the oils/fats by oxidation. This would also serve to minimize any potential odor emissions from the tanks, if even such odors might exist. All process tanks will be built within sufficient secondary containment (diking) to contain any leaks or tank ruptures and prevent process material from contaminating any nearby waterbodies.

Chemicals used to pretreat these fats are common and relatively benign environmentally. Phosphoric acid and caustic are liquids with very low vapor pressures and will not contribute to air pollution in any way. As is the case with the oils and fats, storage tanks and proper containment will be provided to ensure that potential leaks or spills do not contaminate the ground or nearby waterbodies.

The process will have low-level air emissions from several sources associated with pretreatment and support infrastructure including: particulate emissions from materials used in pretreatment, emissions from gas-combusting units, and emissions from tank storage and material loading and unloading.

Dust control emission bag-houses will be used for handling the pretreatment process. The pretreatment process uses three dry, dusty materials: hydrated silica, bleaching clay and diatomaceous earth. Within the pretreatment process, these will be used in an enclosed wet system, therefore emissions will be negligible. Emissions will also occur when new loads of these materials are transported to the site by truck and offloaded in to their storage bins by pneumatic conveyance. The conveying air is filtered to remove dusty material before it is exhausted. Known air flow rates and manufacturer specs on filter efficiency are used to calculate maximum dust (particulate) emission rates. Captured dust is retained within the storage bins. These materials are not toxic.

Wastewater will be generated by two sources: water-washing the feedstock oil and water created by the renewable diesel reaction process of diesel production. Emerald will use a water-wash in the pretreatment process, wherein about 13 gallons per minute (gpm) of demineralized water is contacted with feedstock to remove soaps and other contaminants through centrifuge process. It removes soap that the caustic treatment centrifuge didn't take out, plus trace gums and other water soluble oil contaminants. Dirty wash water can typically contain 0.05% - 0.1% soap, a similar amount of entrained oil, and less than 0.005% phosphorus as it leaves the wash. This stream will be about 18,000 gallons per day. This water will be collected and treated by dissolved air floatation prior to discharge to the City of Port Arthur wastewater system.

Water will also be generated through the EcoFining process. This occurs when feedstock is converted into diesel and some of the oxygen molecules in the feedstock are converted to water. Process modeling indicates the amount of water generated to be about 9% by volume of product diesel flow, or about 17 gallons per minute. This water is separated from the process by an in-process oil-water separation step. This water may contain traces of oily organics, such as diesel fraction molecules. It will contain water-soluble organic molecules, such as short-chain alcohols. Process modeling indicates that this stream will contain about 0.01% to 0.015% propanol/butanol. These are easily treated by the city's biological treatment system. The main pollutant of concern in this wastewater is hydrogen sulfide (H_2S). H_2S gas is present in the process, and a considerable amount dissolves in the process wastewater stream. This stream is also called "sour water" because H_2S has a characteristic smell of rotten eggs. Emerald will have a unit called a sour water stripper to take the H_2S out of the water stream, capture it, and treat the H_2S in the Lo-Cat unit. In the Lo-Cat unit, H_2S is converted to elemental sulfur. The residual H_2S concentration in the wastewater stream is projected to be 10 ppm. After sulfur stripping, the process wastewater stream will be mixed with the feedstock wash-water and treated.

The combined wastewater flow from the two sources described above (approximately 25,000 gallons per day) will be with a dissolved air flotation system (DAF), to remove entrained oil, solids and other contaminants.

Several other small process contact sources will also be collected and treated prior to discharge. Additionally, cooling tower blowdown will be discharged to the Port Arthur wastewater system without treatment.

The pretreatment process will generate two other non-hazardous waste/byproduct streams: soapstock and solid filter cake.

Soap, along with contaminants, is separated from the feedstock stream via centrifuge, and the resulting in soapstock. Because of its significant fat content, it has value and is typically sold into animal feed fat or industrial market. Approximately one truckload per day will be generated and suitable for the local livestock feed market.

The absorption/filtration process generates a non-hazardous solid filter cake that will be disposed as a nonhazardous solid waste. Each component of filter cake – clay, silica, Demetrious earth and oil – is nonhazardous. The combination is nonhazardous and has the texture of dry dirt. Because of the oil content, the cake is not a dusting hazard. Two absorbent materials are added to the feedstock oil, a bleaching clay (nominally 0.10% by

weight) and hydrated silica (nominally 0.20% by weight). It contained 1% or less phosphorus and other nontoxic metals such as calcium. The process will generate about two rolloff containers of cake per week (60,000 to 80,000 pounds), and it will be disposed in a local nonhazardous waste landfill.

Bulk feedstock and product tank emissions will be minimized through the use of conservation, or pressure-vacuum (PV), vents installed on them. PV vents minimize the amount of vapor lost by natural evaporation because they hold a small amount of pressure on the tank. Naphtha is considerably more volatile than either feedstock or diesel. Emissions from it will be controlled by use of a floating roof storage tank. LPG, which is a compressed gas, will be stored in appropriate tankage under pressure to prevent its release to the environment.

The boilers will have emissions from the combustion of lean gas/natural gas. Nitrogen oxides (NOx) emissions from the boilers will be minimized with the installation of Low-NOx burners. The cooling tower will create particulate matter via the emissions of drift, or water droplets containing dissolved solids. As the water evaporates, particulate emissions are formed. Drift will be minimized by keeping dissolved solids low by adequate blow-down from the cooling tower and by the use of drift eliminators.

- **Ecofining Process**

The Ecofining process has a relatively low environmental impact under normal operating conditions.

The Ecofining unit has two gas-fired process heaters which total about 25 million British thermal unit per hour fuel consumption. These will run on either natural gas, lean gas (after the process is started up) or some combination of the two. Emissions from these sources are low, and Low-NOx burners will be employed to minimize NOx emissions.

In addition, acid gases (CO_2 and H_2S) generated in the process and removed by the amine system, will be treated in the sulfur recovery system. This system converts H_2S to elemental sulfur, which is removed from the scrubbing system by filtration as it is generated.

A sour water stripper will be used to treat wastewater, containing nontrivial amounts of H_2S (sour water) and ammonia. Before this material can be discharged to the City of Port Arthur wastewater system, the H_2S and ammonia must be stripped out of it. Emissions from the stripper combined with the acid gas stream are then burned in the process heaters.

The only significant wastewater generated by the process is a stream of about 21 gpm created as oxygenated feedstock molecules are broken down and rearranged in the process. As mentioned in the paragraph above, this wastewater will contain nontrivial amounts of H_2S and ammonia, and will be treated prior to discharge into the City of Port Arthur wastewater system.

The process area will be concreted and enclosed with curbing to contain any spills as indicated in the site-specific SPCC Plan.

The only processed solid waste stream generated is elemental, solid sulfur, produced as it is converted from H_2S into elemental sulfur. Sour gas (H_2S – containing) will be routed to and treated by the sulfur control system.

The solid sulfur is removed from the catalyst solution by filtration. The result will be a material with a sulfur content of 60%, and 40% entrained iron catalyst solution. Neither solid sulfur, nor the catalyst, nor the combination of the two is a hazardous or regulated waste. It is anticipated that the process will generate about 1.9 tons/day of sulfur. At this rate of generation, it would take 10-11 days to fill up a rolloff box for disposal in a nonhazardous waste landfill. The sulfur will be landfilled, or if a nearby sulfur customer is identified, sold or given to the customer.

2.3.5 Construction Activities for the Proposed Action

The Proposed Action has a planned 25-month schedule beginning at the time of financial closing and ending with the operational start-up. Month 1 through Month 8 of the schedule will be used for engineering, planning, preparation of equipment specifications, and ordering equipment. No field work, other than test borings and surveying, is scheduled during this time.

Site preparation, including the placement of approximately 26,374 cubic yards of local, native soil material to be used as fill (1,318 loads at 20 cubic yards per load) and the associated grading, support piling installation, and related work will take place during a five-month window beginning in Month 9 and ending in Month 13. The heaviest usage of earth-moving and compacting equipment, as well as, a notable increase in vehicular traffic will occur throughout this time.

Following the described site preparation activities, structural installation and infrastructure connection will occur as described below.

- Month 11 - Month 20: Installation of structural foundations. Activities will consist primarily of forming and concrete pouring. Included in this phase will be the construction of the parking lot. The parking lot will be constructed using a gravel-based material for the purpose of mitigating for storm water impacts typically associated with impervious structures. This window of time will have a high volume of truck traffic due to the delivery of concrete, steel, and other construction materials are delivered. Following Month 20, nearly all heavy construction equipment will have ceased operation at the site. Transport truck traffic will be markedly reduced as well.
- Month 14 - Month 22: Structural steel will be installed.
- Month 16 - Month 21: Equipment will be set.
- Month 13 - Month 25: Piping will be installed.
- Month 12 - Month 20: Buildings will be erected.
- Month 9 - Month 25: Electrical work will begin with the installation of temporary power and end with completion of installation of instrumentation.

2.4 ALTERNATIVES SITES CONSIDERED BUT ELIMINATED

Emerald investigated several potential locations as alternatives in both Louisiana and Texas. The Louisiana alternative sites investigated were in Iberville, Jefferson and two sites in St. James Parish. The Texas alternative sites were located in Harris, Galveston and Jefferson counties. All alternative locations failed to provide suitable locations as they did not meet the government's timing and operational selection standards and infrastructure siting criteria. Therefore, all alternatives were systematically rejected, except for the two potential GTO sites.

The most common reason for elimination was the inability to secure formal commercial agreements to meet the government's IBPE construction and operational timelines and having significant inherent environmental, infrastructure and operational deficiencies. These site issues included: wetland remediation, regional air compliance restrictions for new sources, legacy brownfields, and installing extensive infrastructure improvements. Each site was assessed and determined not to meet the government's commercially-viable operations and minimal environmental impact requirements.

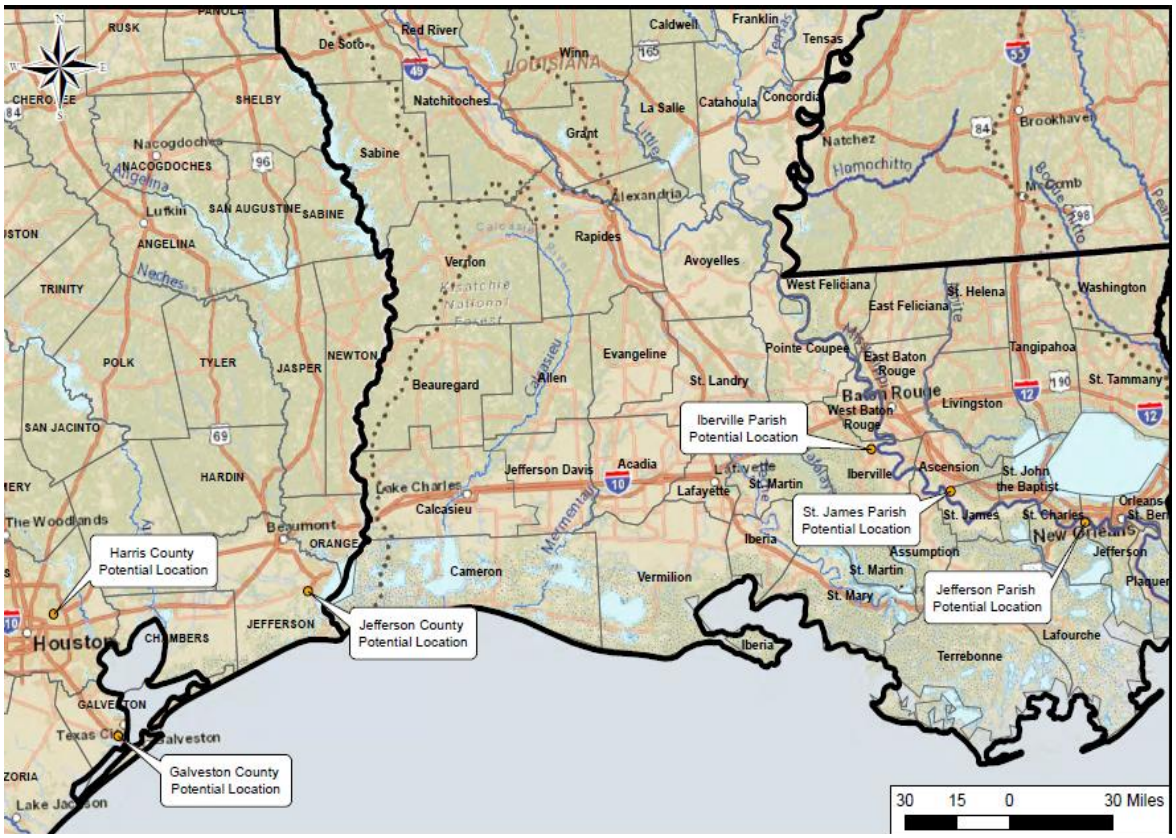
GTO offered Emerald multiple tracts within their 1,100 acre industrial park near the city of Port Arthur, Jefferson County, Texas. The industrial park is bounded by the existing Union Pacific railroad track and Gulf Canal on the East, 57th Street and GTO access road intersection, Taylor Bayou on the West, and Tiger Bayou to the North. (Figures 2-1 and 3-4). Two sites could meet the government's stated timeline and had other characteristics that made them attractive, including a strong logistical component (proximity to barge, rail and major highways) and

proximity to a hydrogen supply. However, the less preferred site included perimeter wetlands regulated by the United States Army Corps of Engineers (USACE) and a small portion of the NorthWest corner lies within a colonial bird rookery (Figure 3-3) zone which could impact construction schedules. Siting the IBPE on this parcel of land would require additional regulatory and permitting coordination exceeding the DoD time frame for meeting the Program objectives. Other than the cited impacts to the wetlands and rookery on the alternative site, the environmental analysis for both sites within the GTO complex is identical. Because the alternative site would require additional adverse environmental impacts cited that site is not being carried forward for independent analysis.

2.5 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the government will not be providing Federal funding to investigate or develop the proposed biofuel production capability on this site. The government may make future and continuing overall project risk and viability determinations based partially on, or completely independent of, the environmental impacts or merits documented herein. It is always possible that non-Federally funded development will result in similar development and environmental impacts to this site as documented.

Figure 2-5 ELIMINATED ALTERNATIVES MAP



CHAPTER 3
DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter defines the existing resources in their current baseline condition and compares, contrasts and analyzes the resulting regulatory environmental quality and occupational health and safety perspectives following a decision to implement the action.

Air pollutant emission rates cited were estimated or derived from several methods widely accepted by the United States Environmental Protection Agency (USEPA) and TCEQ:

- USEPA-derived emission factors;
- TCEQ-derived emission factors;
- Manufacturer's equipment performance guarantees;
- Mass balances; and
- Applicable regulatory limits.

These techniques are common and widely-accepted by federal and state regulators as methods of determining air emissions from yet-to-be constructed sources. The emissions estimates can then be compared to applicable regulations standards.

3.1 AIR QUALITY & METEOROLOGY

3.1.1 Affected Environment

The Proposed Action will effectively develop a 6,500 bpsd Green Diesel™ facility in one of two existing greenfield in the Beaumont-Port Arthur Texas air-shed. No air emissions source is physically located on either site today. Details of air emissions and an overview of regulatory requirements are discussed below.

The Proposed Action will be located in Jefferson County, near Port Arthur, Texas, which is a heavily industrialized area. There are two primary measures that can be used to characterize the base resource state. The National Ambient Air Quality Standards (NAAQS) and the federal Clean Air Act (CAA) division into numerous air quality regions under each state's State Implementation Plan (SIP). Air quality all over the country is evaluated by testing to determine which areas of the country meet federal health-based air quality standards and which do not. The Proposed Action will be within Texas's Beaumont-Port Arthur (BPA) SIP area, which is composed of Jefferson, Orange and Hardin Counties. As of January 1, 2014, the BPA SIP area

is in attainment for all six criteria pollutants (ozone, sulfur dioxide (SO_2), NO_x, lead (Pb), particulate matter, and carbon monoxide (CO)).

A second measure of air quality is the Air Pollutants Watch List (APWL), implemented by the TCEQ over and above any federal requirements. TCEQ monitors a number of target areas for air toxics to determine if additional scrutiny is necessary in the state permitting process. These monitored values are compared to health-based benchmarks called Air Monitoring Comparison Values (AMCVs) to determine if monitored toxics present a health threat. Historically, Jefferson County has had two pollutants on the APWL: SO_2 and benzene. The Proposed Action is located in an area covered by the benzene listing on the APWL. However, due to successful benzene emissions reduction efforts since the area was first put on the APWL in 2001, TCEQ recently proposed to remove the Port Arthur benzene listing. Relative to the Proposed Action, Emerald will not manufacture or process any benzene, and projects it will emit only about 58 pounds of benzene per year as a by-product of natural gas/fuel gas combustion in its boilers and process heaters. Therefore, the Proposed Action will not make any meaningful contribution to ambient benzene concentrations in the area. The SO_2 issue is isolated in the Beaumont area, approximately 12 miles away from the Proposed Action, and the very small sulfur emissions resulting from operations of the Proposed Action would not contribute to it in any meaningful way. The APWL is discussed in more detail later in Section 3.1.2.

The 1990 CAA regulates air emissions from area, stationary, and mobile sources. The USEPA establishes NAAQS for pollutants considered harmful to public health and the environment. The USEPA has established two types of NAAQS: primary and secondary. Primary standards define the maximum levels of air quality that the USEPA determines necessary, with an adequate margin of safety, to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards define the levels of pollution, above which the USEPA considers detrimental to public welfare, including that which will result in decreased visibility and damage to animals, crops, vegetation, and buildings. Air quality is generally considered acceptable if pollutant levels are less than or equal to established standards on a continuing basis.

These standards are summarized in Table 3-1, along with the compliance status of the BPA air quality control region (AQCR), including Jefferson County.

Based on significant air contaminant monitoring, the area in which the Proposed Action is located currently meets all known standards set to be protective of human health and the environment.

Table 3-1 NATIONAL AMBIENT AIR QUALITY STANDARDS

Air Constituent	Averaging Time	NAAQS Primary	NAAQS Secondary	BPA AQCR Designation
Carbon Monoxide (CO)	1 hour	35 ppm	None	Attainment-Unclassifiable
	8 hours	9 ppm	None	Attainment-Unclassifiable
Lead (Elemental) (Pb)	Rolling 3-Month Average	0.15 $\mu g/m^3$	Same as Primary	Attainment-Unclassifiable
Nitrogen Dioxide (NO_2)	1 hour	100 ppb	None	Attainment-Unclassifiable
	Annual (arithmetic average)	53 ppb[1]	Same as Primary	Attainment-Unclassifiable
Ozone (O_3)	8 hours[2]	0.08 ppm	Same as Primary	Attainment (Maintenance)
	8 hours[3]	0.075 ppm	Same as Primary	Attainment-Unclassifiable
Particulate Matter (PM_{10})	24 hours	150 $\mu g/m^3$	Same as Primary	Attainment-Unclassifiable
Particulate Matter ($PM_{2.5}$)	24 hours	35 $\mu g/m^3$	Same as Primary	Attainment-Unclassifiable
	Annual	15.0 $\mu g/m^3$	12.0 $\mu g/m^3$	Attainment-Unclassifiable
Sulfur Dioxide[4] (SO_2)	1 hour	75 ppb	None	Governors Recommendation: Attainment
	3 hours	None	0.5 ppm	Attainment
	24 hours	0.14 ppm	None	Attainment-Unclassifiable
	Annual	0.030 ppm	None	Attainment-Unclassifiable

Source: 40 CFR Part 50, National Primary and Secondary Ambient Air Quality Standards.

ppm = parts per million.
ppb = parts per billion.
$\mu g/m^3$ = micrograms per cubic meter.

1- The official level of the annual NO_2 standard is 0.053 ppm, equal to 53 ppb, which is shown here in ppb units for the purpose of clearer comparison to the 1-hour standard

2- Revoked in 2008 by EPA.

3- EPA proposes that the level of the 8-hour primary standard, which was set at 0.075 ppm in the 2008 final rule, should instead be set at a lower level within the range of 0.060 to 0.070 parts per million (ppm),

4- Notwithstanding the promulgation of a single 1-hour 75 ppb SO_2 NAAQS in 40 CFR 50.17 and listed here, the older 3-hour, 24-hour, and annual SO_2 also listed here, will remain applicable. They will no longer apply to an area one year after designation of an area.

3.1.2 Environment Consequences of Proposed Action

3.1.2.1 National Ambient Air Quality Standards (NAAQS)

The TCEQ, as delegated by USEPA, is responsible for protecting Texas's air quality. The TCEQ has the responsibility for developing plans to attain and maintain compliance with the NAAQS in the State of Texas. The USEPA has the authority and duty to review and approve the Texas SIP, which is an enforceable plan developed at the state level that explains how the state will comply with air quality standards contained in the CAA. For areas in Texas that are in nonattainment with the NAAQS, the SIP describes how the area will reach attainment of the air quality standards.

The BPA SIP area, where the Proposed Action will be constructed, is now in attainment with the NAAQS for all pollutants.

- **Emissions from Construction**

Emissions from construction activities for the Proposed Action will come primarily from two sources; dust generated by cut and fill activity on-site and dust generated by vehicular traffic. In addition, a small amount of NOx, VOC and SO_2 generated as fuel will be consumed by vehicles and other working equipment. Emissions from the Proposed Action's construction phase, summarized in Table 3-2, were estimated using a highway construction model created and maintained by the Sacramento Air Quality Management District, which in turn uses factors from AP-42 and the California Air Resources Board (CARB).

Table 3-2 ESTIMATED EMISSIONS DURING THE CONSTRUCTION PHASE

Unit	VOC	CO	NOx	PM_{10}
Pounds/Day	11.2	54.7	194.3	27.0
Tons/Year	1.67	8.20	29.14	4.04

Model: Road Construction Emissions Model, Version 7.1.5.1

Assumptions: 20 acres disturbed area
2 acres/day disturbed
Appropriate watering program for dust control

- **Emissions from Operations**

Once construction of the Proposed Action is complete, air emissions from operations will come from two sources; stationary sources and mobile sources involved in receiving feedstock and shipping product. Mobile sources are excluded from the permitting process discussed later in this chapter.

The primary source of emissions will be from using several gas-combusting units (i.e. boilers and process heaters). These are common units, thousands of which are in service all around the world. There is a substantial USEPA emissions database and compiled into standard emissions

factors. These factors estimate pollutant emissions based on the amount of gas combusted. Also, in some instances, equipment manufacturers provide emissions specifications that are used. For instance, low NOx burner manufacturers typically guaranty maximum emission rates of NOx and CO. The sulfur control unit also has a manufacturer's guaranty on sulfur emissions that are used to project maximum emissions from that unit. These guarantees are very reliable in that the guarantor is financially liable for meeting the emissions and there are a number of operating units in place from which to assess these guarantees.

A final source of emissions is those associated with the cooling tower, storage tank, and material loading/unloading emissions. These emissions can be reliably projected in similar fashion - conservatively estimated by USEPA AP-42 emission factors. The TCEQ has also compiled emission factors for certain units that are very common in Texas, specifically, particular flares and fugitive emissions. Though the TCEQ is the lead permitting agency in Texas, the USEPA accepts the use of these factors, in that they use variations on USEPA data and methodology. Vapors generated by naphtha loading will be routed to the plant flare for 98% plus destruction to minimize emissions during loading and emissions generated from storage will be minimized by use of a floating roof storage tank.

Because the permitting process considers listed Hazardous Air Pollutants (HAPs), such as benzene and hexane, differently from conventional pollutants, such as VOCs, NOx and PM10, non-HAPs and HAPs are presented in separate tables (Tables 3-3 and 3-4, respectively). The TCEQ's acceptable methods for emission determination methodologies are, in order of preference:

- D (continuous monitoring system)
- F (predictive monitoring system)
- M (measured—stack test data)
- Q (portable analyzer test data)
- V (vendor-supplied emission factors)
- A (AP-42 or TCEQ factors)
- S (scientifically calculated)
- E (estimated)

Methods A and V were used for estimating all projected emissions, the two most preferred methods for not-yet-built facilities.

Table 3-3 CRITERIA POLLUTANTS AND CO_2 EMISSIONS FROM PROCESS OPERATIONS

Source/Pollutant tpy = tons per year	**VOC (tpy)**	**NOx (tpy)**	**SO_2 (tpy)**	**Particulate Matter (tpy)**	**CO (tpy)**	**CO_2 (tpy)**
Silica Silo	0	0	0	0.31	0	-
Clay Silo	0	0	0	0.31	0	-
DE Silo	0	0	0	0.31	0	-
Boiler #1	0.81	2.44	0.09	1.12	12.36	17,654
Boiler #2	0.81	2.44	0.09	1.12	12.36	17,654
Process Heaters	1.18	1.21	0.08	0.62	3.67	13,712
Cooling Tower	0	0	0	5.52	0	-
Flare	0	0	0.021	0	0	973
Emergency Generator	0.12	4.23	0	0.08	2.51	200
Fugitives	11.41	0	0	0	0	0
Uncontrolled Loading	0.89	0	0	0	0	0
Naphtha Loading Oxidizer	0.32	0	0	0	0	973
Tanks	4.93	0	0	0	0	0
TOTALS	**20.46**	**10.32**	**0.28**	**9.38**	**30.90**	**51,187**
PSD THRESHOLDS	**40**	**40**	**40**	**25**	**100**	**100,000**
TEXAS Permit by Rule (PBR) THRESHOLDS	**25**	**250**	**25**	**25-15-10**	**250**	**N/A**
Total CO_2 Emissions At 50% Boiler Firing Rate						**33,532**

1) The #2 Boiler will be the same size as Boiler #1. However, it will only be used on plant startups and as a backup to Boiler #1. Therefore, annual emissions will be trivial.

2) There will be no direct emissions from the sour water stripper or the DAF. All emissions will be routed to the MeriChem sulfur control unit, and then burned as supplemental combustion air in the boilers and process heaters. Contributions to emissions are accounted for in the Process Heaters (Combined) line item.

Table 3-4 HAZARDOUS AIR POLLUTANTS EMISSIONS (HAP) FROM PROCESS OPERATIONS

Source/Pollutant tpy = tons per year	**H_2S (tpy)**	**Benzene (tpy)**	**Formaldehyde (tpy)**	**N-Hexane (tpy)**	**Toluene (tpy)**
Silica Silo	0	0	0	0	0
Clay Silo	0	0	0	0	0
DE Silo	0	0	0	0	0
Boiler #1	0	0.01	0.50	0	0.02
Boiler #2	0	0.01	0.50	0	0.02
Process Heaters	0	0	0.01	0	0
Cooling Tower	0	0	0	0	0
Flare	0.024	0	0	0	0
Emergency Generator	0	0	0	0	0
Fugitives	0	0	0	0.24	0

Source/Pollutant tpy = tons per year	**H_2S (tpy)**	**Benzene (tpy)**	**Formaldehyde (tpy)**	**N-Hexane (tpy)**	**Toluene (tpy)**
Naphtha Loading Oxidizer	0	0	0	0.32	0
Uncontrolled Loading	0	0	0	0	0
Tanks	0	0	0	0.04	0
TOTALS	**0.02**	**0.03**	**1.00**	**0.60**	**0.05**
TOTAL HAP EMISSIONS					**1.70**

1) The #2 Boiler will be the same size as Boiler #1. However, it will only be used on plant startups and as a backup to Boiler #1. Therefore, annual emissions will be trivial.

2) There will be no direct emissions from the sour water stripper or the DAF. All emissions will be routed to the MeriChem sulfur control unit, and then burned as supplemental combustion air in the boilers and process heaters. Contributions to emissions are accounted for in the Process Heaters (Combined) line item.

Table 3-5 summarizes estimated emissions generated by movement rail, barge, and truck movements of feedstock on-site. This information is presented for information and because these are from mobile sources and are not considered in the TCEQ permitting process.

Table 3-5 ON-SITE EMISSIONS FROM LOGISTICS OPERATIONS

Area	**VOC (tpy)**	**CO (tpy)**	**NOx (tpy)**	**PM_{10} (tpy)**	**SO_2 (tpy)**
Rail	0.020	0.042	0.247	0.010	0.078
Barge	0.020	0.103	0.247	0.014	0.103
Truck	0.112	1.404	1.336	3.215	0.021
TOTAL	**0.15**	**1.550**	**1.830**	**3.240**	**0.020**

tpy – tons per year

Tables 3-3 through 3-5 are a comprehensive characterization of emissions resulting from the Proposed Action. There are no other emissions anticipated from any phase of the Proposed Action.

- **Conformity Review**

The General Conformity Rule, established under the CAA (Section 176(c)(4)), and codified at 40 CFR Part 51 Subpart W and 40 CFR Part 93 Subpart B, ensures that the actions taken by federal agencies in nonattainment and maintenance areas do not interfere with a state's plans to meet national standards for air quality. It only applies to areas that are either not in attainment with the NAAQS or are in maintenance status after formerly being in nonattainment. Under the General Conformity Rule, federal agencies must work with state, Tribal and local governments

in a nonattainment or maintenance area to ensure that federal actions conform to the air quality plans established in the applicable state or tribal implementation plan. The federal general conformity rules required states to adopt and submit a general-conformity SIP no later than November 30, 1994. For the BPA AQCR, general conformity only applies to ozone, since it has never been in nonattainment for any other NAAQS pollutant.

In order to streamline the general conformity evaluation process, small projects with low emissions are categorically excluded from general conformity review process. The rules establish *de minimis*, or minimum, emissions levels below which a general conformity review is not required. Regulatory *de minimis* levels are based on the severity of an area's CAA nonattainment. Conformity *de minimis* levels for the BPA area are provided in Table 3-6. Emissions levels for the Proposed Action shown in Table 3-3 are far below the conformity *de minimis* levels for VOC and NOx in the BPA area. Therefore, based on this fact alone, a general conformity review is not required for the Proposed Action.

Table 3-6 *DE MINIMIS* LEVELS FOR TEXAS' OZONE NONATTAINMENT AND MAINTENANCE AREAS

Area	Classification	VOC (tpy)	NOx (tpy)
Beaumont – Port Arthur Area	Maintenance	100	100

tpy – tons per year

While the *de minimis* comparison renders further conformity evaluation of the Proposed Action technically unnecessary, further assessment is made here for additional certainty. The last comprehensive official BPA SIP emissions inventory was performed as part of the 2008 attainment assessments and was used in the determination that the BPA air quality planning area was in attainment with the 2008 ozone NAAQS. The results of these inventories for VOC and NOx, the precursors for ozone formation, are summarized in Tables 3-7 through 3-9 below. These values, including projected future values, can then be compared with the Proposed Action's estimated emissions in Table 3-3.

Table 3-7 SUMMARY OF VOC EMISSIONS IN BPA BY SOURCE TYPE

Source Category	VOC (tons per year average ozone season day)					
	2005	**2011**	**2014**	**2017**	**2021**	**Net Change**
On-Road	11.63	7.92	6.51	5.58	4.77	**-6.86**
Point	42.68	48.26	49.83	51.54	53.95	**11.27**
Area	151.57	155.68	156.84	158.40	160.54	**8.97**
Non-Road	4.96	4.36	4.23	4.20	4.30	**-0.66**
TOTAL	**210.84**	**216.22**	**217.41**	**219.72**	**223.56**	**12.72**

Table 3-8 SUMMARY OF NO_X EMISSIONS IN BPA BY SOURCE TYPE

Source Category	NOx (tons per year average ozone season day)					
	2005	2011	2014	2017	2021	**Net Change**
On-Road	45.60	17.91	12.38	8.66	6.24	**-39.36**
Point	68.49	79.17	81.14	83.04	85.44	**16.95**
Area	9.06	9.95	10.40	10.86	11.47	**2.41**
Non-Road	25.99	27.08	27.88	28.87	30.63	**4.64**
TOTAL	**149.14**	**134.11**	**131.80**	**131.43**	**133.78**	**-15.36**

Table 3-9 SUMMARY OF VOC AND NO_X EMISSIONS IN BPA BY SOURCE TYPE

Source Category	POLLUTANT (tons per day average ozone season day)					
	2005	**2011**	**2014**	**2017**	**2021**	**Net Change**
TOTAL VOC	210.84	216.22	217.41	219.72	223.56	**12.72**
TOTAL NOX	149.14	134.11	131.80	131.43	133.78	**-15.36**
TOTAL COMBINED	**359.98**	**350.33**	**349.21**	**351.15**	**357.34**	**-2.64**

Several observations from Tables 3-7 through 3-9 paint a picture of current and projected emissions that affect ozone levels within the BPA area:

1. Table 3-7 shows that area sources (that is, sources that are neither point sources nor mobile sources) accounted for 71.8% of all VOC emissions in the BPA area in 2005. Data not included in this EA show that the largest contributor to that number is oil and gas production.
2. Also in Table 3-7, area sources are still projected to be the primary source of VOCs in BPA by 2021.
3. Still in Table 3-7, in 2005 point source VOC emissions make up 20.4% of total VOC emissions in the BPA. This number grows to 24.1% by 2021.
4. In Table 3-8, total NOx levels are expected to drop 15.36% between 2005 and 2021. This is completely driven by a sharp drop in vehicle emissions resulting from new engine emissions standards and the retirement of older, more polluting vehicles.
5. Also in Table 3-8, point source emissions of NOx rise from 45.9% of the total BPA NOx budget in 2005 to 63.9% in 2021. This sizable increase is due in part to the projected increase in NOx emissions over that period (increasing numerator), and also due to the drop, discussed above, in the overall NOx emissions (decreasing denominator).

Emission rates in Tables 3-7, 3-8, and 3-9 are expressed in tons/day and emissions in Table 3-3 are expressed in tons/year. Emerald's emissions rates converted to a comparable basis as these three tables are 0.057 tons/day VOC and 0.027 tons/day NOx. These represent 0.026% of total VOC emissions and 0.021% total NOx emissions in the BPA area in 2017, the year of expected start of the Proposed Action's operation. From this comparison, it is clear that the Proposed Action's emissions will be truly insignificant to NAAQS ozone attainment/maintenance in the BPA air quality planning area, as suggested by the *de minimis* evaluation.

NOx emissions from the 2011 EPA inventory are about 29 tons/day, or 27% below the amount of NOx emissions estimated in the BPA SIP inventory. The Proposed Action's contribution to the EPA NOx inventory would be slightly higher than the 0.021% calculated above.

An additional source of emission inventory information for the area, data from EPA's 2011 inventory, found at www.epa.gov/air/emissions is summarized below in Table 3-10:

Table 3-10 TOTAL NO_X EMISSIONS FOR BPA 2011 USEPA INVENTORY

Source Sector	Jefferson (tpy)	Orange (tpy)	Hardin (tpy)
Mobile	8,787	3,532	1,657
Fuel Combustion	6,243	5,894	155
Industrial Processes	4,991	2,869	363
Biogenics	687	160	137
Fires	1,919	273	531
Miscellaneous	136	130	22
Solvent	3	-	-
SUBTOTALS	**22,766**	**12,858**	**2,865**
GRAND TOTALS (NOX)	**38,489 (tpy) and 105.4 (tpd)**		

tpd – tons per day; tpy – tons per year

VOC emissions in the 2011 EPA inventory are more than double those in the SIP inventory (Table 3-11). The Proposed Action's contribution to this inventory total would be even less than the 0.026% of the total VOC inventory calculated above.

It should be noted here that for the 2011 emissions presented in the SIP inventory were projected values, whereas values in the 2011 EPA Inventory represents actual emissions, which could explain some of the variance between the two sets of numbers.

Table 3-11 TOTAL VOC EMISSIONS FOR BPA 2011 USEPA INVENTORY

Source Sector	Jefferson (tpy)	Orange (tpy)	Hardin (tpy)
Mobile	2,273	984	491
Fuel Combustion	505	346	57
Industrial Processes	25,544	6,683	4,893
Biogenics	17,143	15,967	43,807
Fires	79,564	9,633	4,744
Miscellaneous	1,331	255	150
Solvent	2,154	895	566
SUBTOTALS	**128,514**	**34,763**	**54,708**
GRAND TOTALS (NOX)	**217,985 (tpy) and 597.2 (tpd)**		

tpd – tons per day; tpy – tons per year

- **New Source Review - Prevention of Significant Deterioration**

The federal New Source Review (NSR) program contained in the CAA is a preconstruction review/permitting program to help maintain and improve air quality across the U.S. New major sources and major modifications to major sources in areas of the country that are not in attainment with NAAQS are subject to a portion of NSR called Nonattainment New Source Review (NNSR). This program is designed to ensure that new major sources and major modifications to major sources do not result in a net emissions increase, or, depending on the severity of nonattainment, net emissions decreases via emissions offsets. In areas such as Jefferson County that are in attainment with the NAAQS, the CAA requires that new and existing major sources of regulated air pollutants comply with a preconstruction permitting review program to prevent the significant deterioration of air quality in the area. According to the Prevention of Significant Deterioration (PSD) regulations (40 CFR §52.21 and TAC Title 30, Chapter 116.B.6), PSD review is required on a pollutant-specific basis if a new major source will be constructed or if a major modification of an existing major source will occur. A proposed new source is considered a major source if the potential emissions would be above the major source threshold for any regulated air pollutant. A modification is considered a major modification if both the project emissions increase resulting from the modification and the contemporaneous net emissions increase of any regulated pollutant are equal to or greater than the respective pollutants' significant emission rate, as established by the USEPA. The relevant PSD significance thresholds are shown in the Table 3-12.

Table 3-12 PREVENTION OF SIGNIFICANT DETERIORATION SIGNIFICANCE THRESHOLDS

Air Pollutant	PSD Significance Threshold (tpy)
Sulfur Dioxide (SO2)	40
Particulate Matter (PM10)	15
Particulate Matter	25
Nitrogen Oxides (NOX)	40
Carbon Monoxide (CO)	100
Hydrogen Sulfide (H2S)	10
Volatile Organic Compounds (VOC)	40

tpy – tons per year

The Proposed Action will be built as a new facility; therefore, there are no existing permits, emissions sources or actual emissions to analyze. However, projected emission rates have been estimated for the Proposed Action (Table 3-3), and they are below the PSD threshold rates in Table 3-13. Therefore, the Proposed Action will be considered a non-major (or, more properly, minor) source.

The TCEQ, like most other states, requires permitting for new and modified non-major sources. The vast majority of non-major source permitting in Texas is done under a program called "Permit by Rule", or PBR. The regulations for PBR are found at 30 TAC Chapter 106. According to language in this Chapter, the PBR program is for "certain types of facilities or changes within facilities which the commission has determined will not make a significant contribution of air contaminants to the atmosphere". Because of these small contributions, the TCEQ has structured the permitting process to be much simpler and faster than major source permitting. If total emissions from the proposed facility fall below those in Table 3-13, and if the facility is not a major new source or major modification to an existing major source (under either PSD or NNSR), the facility may qualify for PBR.

Table 3-13 TCEQ PERMIT BY RULE THRESHOLDS

Air Pollutant	Threshold (tpy)
Sulfur Dioxide (SO2)	25
Particulate Matter	25
Nitrogen Oxides (NOX)	250
Carbon Monoxide (CO)	250
Volatile Organic Compounds (VOC)	25
Particulate Matter (PM10)	15
Particulate Matter (PM2.5)	10
All Others (except CO2, H2O, N2, CH4, C2H6, H2 and O2)	25

tpy – tons per year

The Proposed Action's emission rate falls below these thresholds, and is neither a new major source nor a major modification to an existing source. Based on these and other applicable factors found in 30 TAC Chapter 106, Emerald believes the Proposed Action qualifies for permit issuance under PBR. Emerald attended a pre-application meeting with TCEQ permitting officials to discuss the Proposed Action, and they agreed that all Emerald sources would fit in the PBR program.

GTO has stipulated that all site tenants, including Emerald, will agree to participate in a Multiple Air Contaminant Sources/Properties petition, found in 30 TAC 101.2, which, when granted by TCEQ, would allow all industrial facilities located at the GTO site to be treated as a single industrial entity for purposes of ambient air quality compliance. GTO management has requested that Emerald defer submittal of its air permit application until after GTO submits the Multiple Air Contaminant Sources/Properties petition.

- **Title V**

The CAA Amendments of 1990 included a provision for Federal Operating Permits (FOPs) for major air emissions sources. This provision was under Title V of the 1990 CAA Amendments, and FOPs are commonly referred to as Title V permits. A source is considered "major" under Title V if it emits 100 tpy or more of any regulated air pollutant, 10 tpy or more of any HAP or 25 tpy or more of all aggregated HAPs. The Proposed Action is not a major source under the Title V program, and is therefore not required to obtain a Title V permit.

- **National Emissions Standards for Hazardous Air Pollutants (NESHAPS)**

The federal National Emissions Standards for Hazardous Air Pollutants (NESHAPS) sets controls on point sources of federally-listed Hazardous Air Pollutants (HAPs. Control requirements for the NESHAPS program are found in 40 CFR Parts 61 and 63. The Proposed Action will generate, handle and store hexane, a federal HAP, as a component of naphtha. Emissions of hexane are primarily from fugitive emissions. Emission factors also show the Proposed Action will generate small amounts of benzene, formaldehyde and toluene as a by-product of natural gas combustion in boilers and process heaters. Also, 40 CFR 63 Subpart ZZZZ for reciprocating internal combustion engines applies to the 750 kilowatt (kW) diesel emergency generator. Taken in sum, total HAP emissions are well below 10 tpy for a single HAP and 25 tpy for all HAPs in aggregate, which means the Proposed Action will not be a major HAP emissions source. The Proposed Action will also handle diethanolamine in the amine system, which is fully enclosed, and no emissions will result from it.

- **New Source Performance Standards (NSPS)**

The federal New Source Performance Standards (NSPS) apply to many types of new and significantly modified chemical processes and systems, regardless of whether or not the source is major. Several NSPS's will apply to the Proposed Action and are listed in Table 3-14.

Table 3-14 FEDERAL AIR NSPS APPLICABLE TO THE PROPOSED ACTION

Emerald Unit	NSPS Subpart
Flare	Appendix A
Tanks	Kb – Naphtha Tank Only
Distillation Processes	NNN – gaseous vents & product line from distillation system
Fugitive Emissions	VVa – pumps, valves, and other leak sources
Diesel Generator	IIII – Compression ignition generator engine

- **Risk Management Program & Process Hazard Assessment (PSM)**

The federal Risk Management Program found in 40 CFR Part 68 will apply to the Proposed Action due to the volumes of listed chemicals propane, butane, Hydrogen and possibly others. This program requires performance of a number of elements to assess, prevent and mitigate risks from the toxic and flammable chemicals. The Proposed Action will also be subject to a

very similar program in the Occupational Health and Safety Administration (OSHA) regulations, found in 29 CFR 1910.119, called Process Safety Management, or PSM. Emerald will comply with the requirements of these programs, beginning with the performance of a Process Hazard Assessment during the detailed engineering portion of the Proposed Action.

- **TCEQ Air Pollutant Watch List**

Each year the TCEQ collects an extensive amount of ambient air monitoring data and evaluates the potential for adverse short- and long-term health effects and odors. The APWL is the TCEQ's program to address areas in Texas where monitoring data show persistent, elevated concentrations of air toxics. The TCEQ uses the APWL process to focus its resources, notify the public, engage stakeholders, and develop strategic actions to reduce emissions. One of the primary strategies for addressing APWL areas includes additional scrutiny for air permit applications that include a request to increase an APWL contaminant. The TCEQ will work with sources to encourage efforts to reduce emissions, may provide assistance to small businesses and local governments to identify strategies for reducing APWL contaminants, may increase monitoring for an APWL area, and may conduct focused investigations for companies located in an APWL area.

Two TCEQ APWL entries occur in the BPA area. First, Port Arthur has been on the list for benzene since 2001. This listing focused on the areas near the Proposed Action due to the large refineries to the east. However, benzene emissions and ambient concentrations have been reduced so successfully that TCEQ has removed Port Arthur from the APWL in May 2014 (TCEQ 2014). The second BPA area on the APWL is in Beaumont, which was listed for SO_2. This area is not connected to the Proposed Action, and Emerald will have very low SO_2 emissions.

- **Greenhouse Gases (GHGs)**

Greenhouse Gases (GHGs) are gases in the Earth's atmosphere that transmit short-wave incoming solar radiation, but absorb long wave infrared radiation re-emitted from the Earth's surface, or in simple terms they "trap heat." Because of its findings the potential for GHGs to adversely affect human health and the environment, the USEPA has issued regulations related to the permitting and control of certain GHGs (CO_2, methane, N_2O, hydrofluorcarbons, perfluorocarbons, and sulfur hexafluoride). The only GHG the Proposed Action will emit in meaningful quantities is CO_2.

Emerald estimates GHG emissions from the Proposed Action will be 92,771 tpy CO_2-equivalent (or 0.084 million metric tons per year (mmtpy)). Therefore, the Proposed Action is does not trigger GHG permitting under the Tailoring Rule. This estimate assumes all sources are emitting at full nameplate rates and no netting of biogenic GHG emissions. Additionally,

the Proposed Action is not a major source or a major modification under either the PSD or Title V programs for any other regulated pollutants, so it is not an "anyway" source. Lastly, based on the Supreme Court ruling, even if the Proposed Action were to emit over 100,000 tpy GHG's, it would still not trigger PSD because it is not a major source under PSD or Title V for any other pollutant. Therefore, the Proposed Action's GHG emissions do not trigger any permitting requirements.

Even though not considered under its current permit application or the Tailoring Rule, the Proposed Action's "net" GHG emissions are much less than the 92,771 tpy estimate stated above. The Proposed Action has two boilers to provide steam. Boiler capacity was sized to provide a much larger steam supply during plant startup than is required for normal steady-state significantly, such that both boilers will be fired at 50% - 60% capacity during normal operations. Firing the boilers at 60% rate would reduce CO_2 equivalent emissions by 20,000 tpy. Emerald does not plan to request a permit limit for this lower rate because there is no regulatory demand. However, actual operations will generate 20,000 tpy CO_2 less than the stated maximum.

Additionally, much of the Proposed Action's CO_2 emissions are biogenic – that is, they come from renewable sources and should not be considered contributors to increases in atmospheric GHGs. The Proposed Action's EcoFining process generates approximately 21,510 tpy CO_2 from its biogenic feedstock. Further, the process generates a fuel gas ("lean gas") from biogenic feedstock that will be used in process heaters and/or boilers to displace some natural gas usage. Biogenic emissions from this fuel gas usage are estimated to be 18,762 tpy CO_2. So, accounting for reduced boiler operating rates and biogenic CO_2 sources, actual anthropogenic CO_2 emissions from the Proposed Action are estimated to be 32,366 tpy CO_2 (or 0.29 mmtpy). The USEPA measures GHG emissions in short tons per year to be consistent with the established PSD and Title V programs, whereas most other global GHG tracking/ regulation measures GHG emissions in millions of metric tons per year.

Further, substitution of Emerald's Green Diesel™ into the national fuel pool is expected to reduce greenhouse gas emissions by between 0.621 and 1.02 million metric tons per year in equivalent carbon dioxide emissions compared to traditional fossil fuel diesel.

This estimate of GHG reductions was generated using the widely-accepted and highly vetted process and values of the California Air Resources Board (CARB)'s Low Carbon Fuels Standard (LCFS) program. The goal of CARB's LCFS is to reduce the carbon intensity of California's transportation fuel by at least 10% by 2020. CARB has developed a methodology for estimating GHG emissions and quantifying reductions in which it evaluates and approves the lifecycle for GHG emissions of renewable fuels, including the process to produce renewable

fuels, and the processes to create and transport feedstocks to processing facilities. Each feedstock/source/processing method pathway is individually evaluated and assigned a Carbon Intensity (CI). The renewable/alternative fuel's CI is compared to the petroleum fuel's CI to calculate the net GHG emissions reduction generated by using the renewable fuel.

Calculation of the GHG reduction for the Proposed Action used the following values:

- *Petroleum diesel CI* – 94.71 grams CO_2 equivalent per megajoule of fuel delivered (g CO_2e/MJ).
- *Renewable diesel CI* – Varies significantly based on the feedstock used and the facility it is processed in. For instance, Diamond Green located at Valero's St. Charles, Louisiana refinery has used CARB's methodology to develop a number of CI's for its product. These CI's include energy required to transport feedstock to the St. Charles facility and from the St. Charles facility to typical California locations using both rail and ship to move finished product. CI's were created for a variety of feedstocks. The CI's range from 5.56 g CO_2e/MJ for Midwest corn oil transported by rail to St. Charles, processed and then transported by ship to California to 40.34 g CO_2/MJ for rendered tallow (high energy use) shipped 600 miles from St. Charles plant, then railed to California). A CARB pathway evaluation for the Proposed Action would produce very similar CI's to the Diamond Green CI's.
- *Energy content of renewable diesel* – 122,887 British Thermal Unit/gallon (lower heating value), or 129.655 MJ/gallon
- *Annual Emerald Renewable Diesel production* – 88.3 million gallons/year

The calculation is then:

GHG Reduction (metric tons $CO_{2\text{-}e}$) =

$$(CI_P - CI_R) * 129.655 * 88{,}300{,}000 * (mt/1{,}000{,}000 \text{ grams})$$

Variance in the renewable ^{diesel} CI's between feedstocks is the primary reason behind the variance in projected GHG reductions due to renewable diesel use in the U.S. fuel pool.

Note that Midwest soybean oil, a common feedstock for biodiesel, another biomass-based diesel product, is not included in this Lifecycle Assessment (LCA). From a market perspective, soy-based biomass-based diesel has a much higher CI than other suitable feedstocks because CARB significantly penalizes it due to indirect land use change (ILUC). More specific to the Proposed Action, Emerald is prohibited under the terms of its Technical Investment Agreement (TIA) from using food crops such as soybean oil in the project.

For comparative purposes, other published LCA's provide similar estimates of GHG reduction through the use of renewable diesel in the U.S. motor fuel pool. For instance, the federal RFS-2 program requires a minimum of 50% reduction in lifecycle GHG emissions before it will approve any process/feedstock pathway for biomass-based diesel. Using numbers from the CARB process, this would imply that a CI would have to be no more than 47.35 g CO2-e/MJ (half of the value for petroleum diesel) before it will approve an RFS-2 pathway for biomass-based diesel. Also, a paper by Kalnes, et al, published in "Biofuels Technology" journal derives CI values for renewable diesel very similar to those generated by CARB.

- **Other Potential Impacts**

The low level of air pollutant emissions from the Proposed Action are not expected to result in impaired visibility, effects on plant life, animal life or any other sensitive receptors in the vicinity of the Proposed Action.

Sensitive receptors in the vicinity of the Proposed Action include a residential area on the north boundary of the GTO Facility property. The nearest residence is approximately 4,300 feet from the nearest project boundary. No discernable impacts to the residential area are expected to result from any emissions from the Proposed Action.

3.1.3 Environmental Consequences of the No-Action Alternative

Under the No-Action Alternative, the Proposed Action would not likely be constructed. The proposed IBPE design employs unique and innovative technologies to ensure it emits minimal emissions falling below the Texas Title V permitting levels. As GT Omniport is actively soliciting additional tenants, it is possible other heavy industrial tenants could deploy operations with larger air pollution footprints.

Without developing this specific fuel production capability there would be less renewable fuel going into the national fuel pool reducing the GHGs by an estimated 1.1 million metric tons CO_2-equivalent.

3.2 WATER RESOURCES

This section describes water resources, including groundwater quality, sole source aquifer systems, surface hydrology and water quality and floodplain data currently within and surrounding the Proposed Action (Figures 2-3 and 3-1). The Texas Commission on Environmental Quality (TCEQ) regulates stormwater discharges from construction activities, industrial facilities, and publicly operated storm drains through the TPDES.

3.2.1 Affected Environment

The Proposed Action is located within the major Gulf Coast Aquifer. The Gulf Coast aquifer parallels the Texas coastline and extends through 54 counties from the Rio Grande northeastward to the Louisiana border. The Gulf Coast Aquifer consists of discontinuous sand, silt, clay, and gravel beds. This system has been divided into three major water-producing components referred to as the Chicot, Evangeline, and Jasper aquifers. In 2008, municipalities used 62% and irrigation used 25% of the water volume pumped from the aquifer.

The Chicot aquifer is approximately 800 to 1,200 feet below the surface at this site. The proposed construction and operational water usage associated with this proposed action will not directly impact these Gulf Coast aquifers. After reviewing the Texas Water Development Board records there is no active water wells located within one-mile of the proposed action.

The principal source of water for Port Arthur and vicinity of the Proposed Action is surface sheetflow from rain events are controlled by upstream dams. The Proposed Action is located wholly within the Sabine Lake watershed (HUC 12040201) which is part of the larger Galveston Bay – Sabine Lake watershed (HUC 120402) controlled by the LNVA. The Sabine Lake watershed covers an area of approximately 9,860 square miles throughout Texas and Louisiana.

EO 11988 on floodplain management requires that federal agencies avoid activities that directly or indirectly result in the development of a floodplain area. Due to the existing Port Arthur Hurricane Protection Levee System (approximately 14-16.5 feet tall according to Jefferson County Drainage District #7) bordering the eastern bank of Taylor Bayou, the Proposed Action and its surrounding areas lie within the Federal Emergency Management Agency (FEMA) Flood Hazard Zone X500; areas outside of the 100-year floodplain but inside of the 500-year floodplain (Figure 3-1). No new facility construction is required at the park's dock which is the only location within an applicable floodplain covered by this executive order.

3.2.2 Environmental Consequences of Proposed Action

The greatest potential for IBPE impacts to groundwater during construction and operation of the Proposed Action would be an accidental release of fuels, lubricants or hazardous chemicals impacting the LNVA ground waters. Due to their significant depth, any accidental chemical release will not cause significant impact to existing aquifers.

3.2.2.1 Construction.

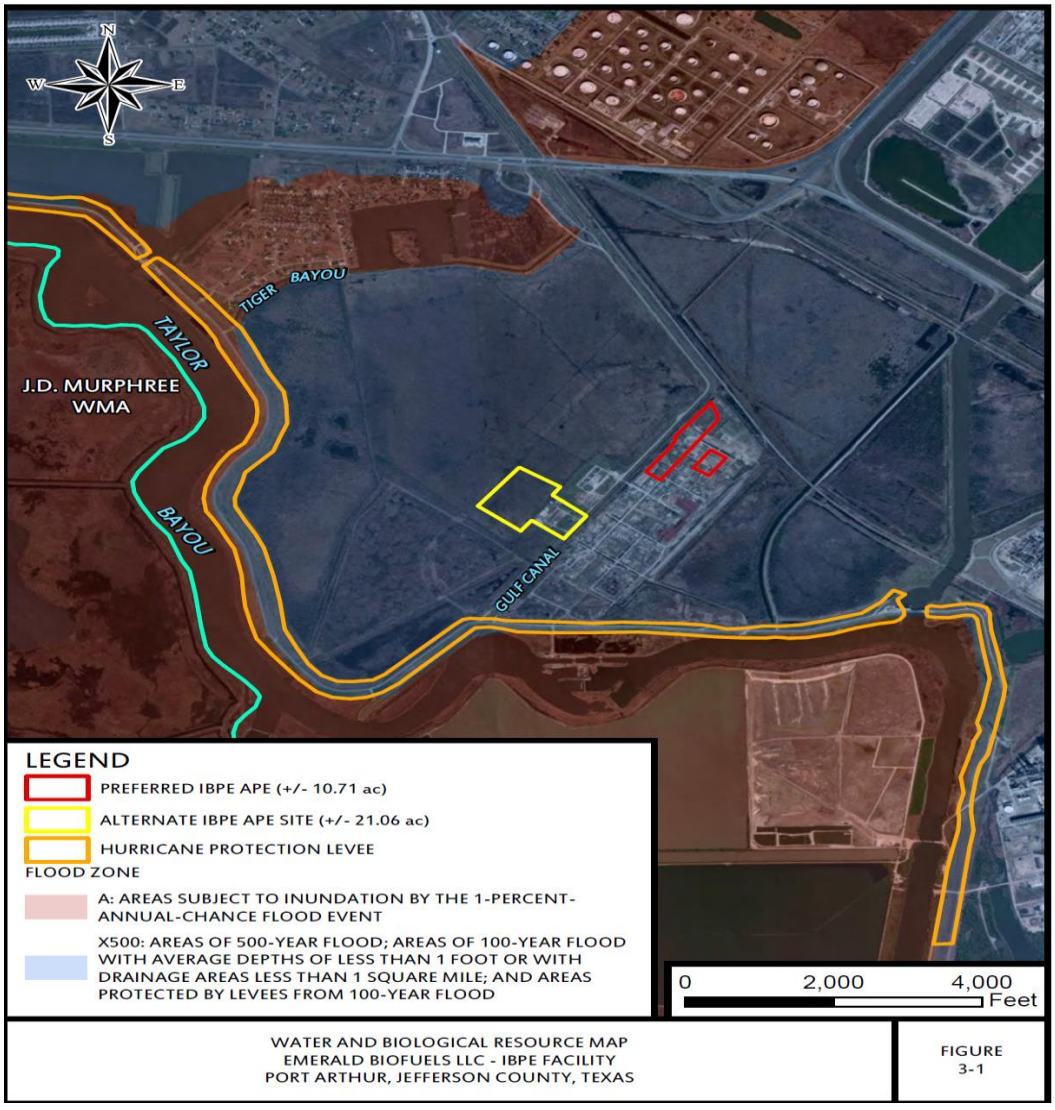
Prior to construction of the Proposed Action, the necessary TCEQ – TPDES Construction General Permit Number TXR150000 will be obtained and prepare a site-specific Construction Storm-water Pollution Prevention Plan (SWPPP). In addition, due to the IBPE's proximity to the LNVA governed waterways and canals, the GTO dock facility located on the Taylor Bayou

Outfall and its corresponding water linkages upstream from the Inter-coastal waterway and Gulf of Mexico relevant Spill Prevention Control and Countermeasures (SPCC) Plans are required.

Rainwater falling on the site will be monitored pursuant to a TCEQ Stormwater Permit in conjunction with a site-specific Stormwater Pollution and Prevention Plan (SWPPP) to be developed by Emerald as required by TCEQ and EPA in concert with requirements that may apply site-wide.

Best management practices (BMPs) are those practices determined to be the most efficient, practical, and cost-effective measures identified to guide a particular activity or to address a particular problem and will be discussed in detail within the SWPPP and SPCC Plan.

Figure 3-1 WATER RESOURCE MAP



3.2.2.2. Operational Wastewater

Upon completion of construction and prior to operation, Emerald will apply for and obtain coverage under TPDES General Permit No. TXR050000.

After stripping the process water (nominally 21 gpm) of its H_2S and ammonia it will be discharged into the Port Arthur's wastewater system. It should contain less than 0.02% fats, oils and grease, less than 0.005% phosphorus, and 0.05% suspended solids. Organic loading, as measured by biochemical oxygen demand will be less than 500 milligrams per liter. Table 3-15 lists the maximum wastewater sanitary sewer discharge limits.

Table 3-15 WASTEWATER DISCHARGE MAXIMUM VALUES

Components	Discharge Value
Total Design Flow Rate	50,400 gallons per day
Fats, Oil, and Greases	200 milligrams per liter
Biochemical Oxygen Demand	500 milligrams per liter
Chemical Oxygen Demand	300 milligrams per liter
Total Suspended Solids	500 milligrams per liter
pH	6.0 to 7.5 pH units
Temperature	100 degrees Fahrenheit

3.2.3 Environmental Consequences of the No-Action Alternative

Since the GTO industrial park sites are actively marketed as a petrochemical industrial and logistical hub, future growth is likely irrespective of this Proposed Action being completed. Currently petroleum and related refined products are trans-shipped though GTO's barge docks, heading down the Taylor Bayou to the Gulf of Mexico, and existing rail or trucking routes. Surface industrial water canals transverse the park in close proximity to existing GTO transportation infrastructure. Increased park development and traffic raises potential for cargo spills and mishaps.

The GTO management plans to plumb the industrial park from Port Arthur's potable and wastewaters utilities. The proposed IBPE industrial water design plans specifies potable water there-by, requiring no continuous or significant LNVA industrial canal water withdraw to satisfy their production requirements resulting in minimal or no impact to surface waters.

3.3 UTILITIES AND INFRASTRUCTURE

Table 3-16 describes the existing GTO park utility and infrastructure resources within the GTO complex.

Table 3-16 UTILITY ANALYSIS

Infrastructure	Status/Condition
Industrial road access leading to Highway 93 spur and Highway 73	Active, good condition. No upgrade required.
Rail-line and spur adjacent to proposed site	Active, good condition No upgrade required.
Taylor Bayou Outfall barge dock facility	Active, good condition. No upgrade required.
Pipeline from dock to storage tanks inside hurricane barrier	Active, good condition. No upgrade required.
Entergy electrical lines	Available in close proximity, good condition. Tie-in required. No upgrade required.
Industrial water	Lower Naches Valley water canal adjacent to both sites.
Port Arthur sanitary sewer and potable water	Tie-in required. GTO main will be connected at Highway 73 frontage.
Hydrogen, petroleum, fuel pipelines under GTO complex	Active, good condition. Tie-in, as required. No upgrade required.

3.3.1 Affected Environment

3.3.1.1 Operations Requirements

- Electricity – The Proposed Action requires approximately 4MWs to operate. The largest electrical load onsite will be the hydrogen compressor.

- Natural Gas – The Proposed Action boilers will be fired utilizing a mixture of processed lean gas and natural gas.

- Potable Water – The Proposed Action will use approximately 400 gpm will be required for sanitary and process water. Process water requires approximately 100 gpm to operate. Approximately 40-50 gpm will be utilized as cooling tower makeup, 10-15 gpm as boiler feed water makeup, 20 gpm as consumed process water.

- LNVA Industrial Water – The Proposed Action will pull and store LNVA's Gulf Canal water for the IBPE complex's fire protection purposes.

- Wastewater/Sanitary Sewer – The Proposed Action will generate wastewater in the pretreatment area and process area washdowns. Wastewater will also be produced in the Ecofining process. These waste streams, along with sanitary wastewater, will be collected and discharged into existing systems.

3.3.1.2 Transportation

The Proposed Action and surrounding areas are accessible from an existing private access road heading south off Highway 73. The Proposed Action is located south of the existing private access road and across the Gulf Canal immediately after the access road curves westward (Figure 2-2b) to a trucking dock. Current infrastructure is in place such as a railroad track encircling the Proposed Action, a rail terminal, and a barge dock on Taylor Bayou approximately 0.68 miles southwest of the Proposed Action. Rail transportation in the vicinity includes Union Pacific Railroad and Burlington Northern Santa Fe Railroad. Taylor Bayou flows into the Intracoastal Waterway approximately four miles downstream which is a major means of transportation in the area. A vessel travels approximately 20 miles from the existing GTO dock through the Taylor Bayou outfall, inter-coastal waterway, Port Arthur Ship Canal and Sabine River to its mouth at the Gulf of Mexico. Emerald plans to utilize the existing and proposed GTO transportation and logistical infrastructure whenever possible.

3.3.2 Environmental Consequences of Proposed Action

3.3.2.1 Operations Requirements

The GTO Facility has municipal infrastructure already in place and will utilize. For example, there is above ground high voltage power lines approximately 200 feet away from the preferred site's footprint. The alternative site is approximately 1000 feet away from its footprint. The refinery's electric draw from the existing Entergy trunk line will not impact their overall transmission capability or operations.

There are multiple commercial Hydrogen gas pipelines transecting GTO's park boundary and the nearest location is adjacent to the railroad tracks.

An above ground pipeline will be constructed to transport raw feedstock materials and finished product to and from storage tanks to the transportation truck and barge docks facilitating safe transportation and handling. The proposed pipeline footprint follows a highly disturbed and previously developed industrial footprint, adjacent to the existing GTO underground pipeline from the barge dock to inside the rail head and truck dock. (Figure 2-3).

3.3.2.2 Operational water and wastewater alternatives previously considered

The facility will use adjacent LNVA intake water for infrequent fire-fighting purposes. The water intake will be compliant with existing regulatory requirements and use best practices to minimize impacts to its existing flora and fauna.

The GTO facility plans to connect into municipal potable water and sewer line running adjacent to the frontage on Highway 73 for all of its daily operational needs. The team performed an alternative process water sources or waste water disposal assessment:

Alternative operational process water sources were considered. The Gulf Canal water is located adjacent to both sites, potentially reducing the size of the common potable water pipeline line from State Route 73. The alternative was eliminated for the following reasons:

- Pulling LNVA derived process water requires additional chemical pre-treatment prior to inserting into the production process. This increases chemical processing requirements and industrial footprint. Pre-treatment produces waste products requiring disposal. Adopting this water source does not resolve employee potable water requirements.

- The resultant daily water intake quantity decreases the remaining canal water quality for hosting water-based wildlife, especially during drier climatic times.

As planned, by installing and siting the industrial park common potable water pipeline adjacent to and in the previously disturbed elevated access road shoulder there will be minimal or no impacts to nearby wetlands, floodplains and LNVA canal wildlife populations.

An alternative operational waste-water discharge method was considered. Two alternative options were reviewed and rejected.

- Developing a GTO wastewater processing capability. Reviewing the site's historical topographical map (Appendix F, 1993 Historical Topographical map) documents a previous on-site industrial wastewater operation located near the current barge dock area, current regulatory requirements to reconstitute that capability would be extremely difficult and extend the effort beyond the government's allotted milestones and not align with the industrial park owners business objectives.

- Industrial wastewater ponds are located on Taylor Bayou's South shore. Developing a transport mode for its process and sanitary wastewater to reach that facility is difficult. While technically feasible, installing the wastewater pipeline under and transecting the bayou, bypassing or climbing the existing hurricane levy involves significantly more wetland impacts, environmental regulatory and fiscal challenges than the preferred alternative.

3.3.2.3 Transportation

The existing GTO Facility is capable of barge, rail and truck receiving and shipment. The existing marine dock, connecting piping, bulk storage tanks, and rail facilities for receiving, unloading, and holding are in place. The dock side maximum draught is 11 feet; the bayou depth is maintained at 15 feet. Vehicular, rail and vessel traffic associated with the Proposed Action will utilize existing infrastructure. Existing infrastructure surrounding the Proposed Action will accommodate the increase in traffic and transportation impacts will be negligible.

- Construction – Except for perhaps a few large process vessels, it is expected that all materials used to construct the Proposed Action will arrive by truck. Construction of the Proposed Action will generate temporary traffic impacts due to the influx of construction workers entering and leaving the construction site. Heavy construction equipment will remain onsite for the duration of the Proposed Action's construction activities. Highway 73 will see the greatest influx of traffic; however, the amount of traffic due to construction will represent a relatively small percentage of daily traffic. Highway 73 is a paved four lane roadway fully capable of accommodating the minor increase in traffic. Impact to residential roads will be avoided. The overall impact to traffic will be negligible. Rail and marine transportation are not expected to be significantly utilized for transporting the construction materials or articles.

- Operation – The Proposed Action will generate additional traffic during operations due to employees entering and leaving the facility. The private road used to access the Proposed Action is zoned by the City of Port Arthur as industrial; therefore, the road will be utilized for its intended use. The existing traffic on Highway 73 currently includes employees entering and leaving industrial positions similar to the industrial positions that will be created by the Proposed Action. It is expected that the traffic impacts on Highway 73 and other surface streets from the increase in employee traffic would be minimal.

3.3.3 Environmental Consequences of the No-Action Alternative

Under the No-Action Alternative, the Proposed Action would not be constructed. Certain public utility infrastructures, i.e., potable and sanitary water hook-ups, may not take place. The proposed action is not expected to significantly change the existing infrastructure in place today.

3.4 BIOLOGICAL/NATURAL RESOURCES

3.4.1 Affected Environment

This section describes existing biological resources including threatened and endangered (T&E) species protected under the Endangered Species Act of 1953 and their critical habitat, the Migratory Bird Treaty Act of 1918, and the Bald and Golden Eagle Protection Act of 1940. In addition, this section describes wetlands, waterbodies, and other special aquatic sites regulated by the USACE under Section 404 of the Clean Water Act. Furthermore, this section evaluates the Coastal Zone defined by the Texas General Land Office – Coastal Management Program within and surrounding the Proposed Action.

- **Existing Habitat**

A wetland delineation was performed in accordance with the USACE Wetland Delineation Manual (Environmental Laboratory 1987) in conjunction with the Atlantic and Gulf Coastal Plain Regional Supplement to the USACE Wetland Delineation Manual (Environmental Laboratory 2010). The two sites have similar fauna characteristics consisted primarily of gravel covered with red clover (Trifolium pratense), Bermuda grass (Cynodon dactylon), and yellow bluestem (Bothriochloa ischaemum). USDA publications cite the three species as introduced into North America.

- **Section 404 of the Clean Water Act - Waters of the U.S.**

Section 404 of the Clean Water Act (CWA) establishes a federal program that regulates the discharge of dredged and fill material into waters of the U.S., including wetlands. The USACE and US EPA are responsible for regulating water resources under the CWA. During a routine wetland delineation survey, no wetlands were identified within the preferred Proposed Action area construction footprint. Wetlands were identified on the periphery of the alternative GTO site (Appendix B). In addition, 33CFR 328.4(c)1 defines the lateral limit of jurisdiction in non-tidal waters as the Ordinary High Water Mark, provided the jurisdiction is not extended by the presence of wetlands. Surrounding the Proposed Action, within a mile, there is three predominate features: Tiger Bayou, Taylor Bayou, and the Gulf Canal (Figure 3-1.)

- **Endangered Species Act of 1953,**

The Endangered Species Act (ESA) of 1953 establishes measures for the protection of plant and animal species that are federally listed as threatened and endangered (T&E), and for the conservation of habitats that are critical to the continued existence of those species. A federally listed *endangered* species is any species that is in danger of extinction throughout all or a significant portion of its range. A federally listed *threatened* species is any species that is likely to become endangered in the foreseeable future throughout all or a significant

portion of its range. Candidate species do not carry regulatory protection; however, because they may be listed in the future, candidate species, if listed, were included in this EA as a conservative measure. The federal regulatory agencies responsible for enacting the ESA are the USFWS and the National Oceanic Atmospheric Association, National Marine Fisheries Service (NOAA-NMFS).

In addition to T&E species federally listed by the USFWS and NOAA-NMFS, the Texas Parks and Wildlife Department (TPWD) maintain county-specific state T&E species lists (TPWD 2014a).

Both the USFWS and the TPWD maintain documentation of potential state and federally listed species occurrence in Texas, by county (USFWS 2014a and TPWD 2014a). The TPWD frequently lists the status of a federally listed species as potentially occurring in a county that is not documented as occurring on the USFWS status list. Although the USFWS has regulatory authority over the status of species listed under the ESA, both the USFWS and TPWD status lists were used in the analysis of this EA.

According to the USFWS, there are seven federally listed T&E species having the potential to occur in Jefferson County, Texas (Table 3-17). In addition, the USFWS does not document any critical habitat as occurring within Jefferson County, Texas (USFWS 2014b). According to the TPWD, there are twenty-seven T&E species having the potential to occur in Jefferson County, Texas (Table 3-17). Furthermore, a review of TPWD's – Texas Natural Diversity Database (TXNDD) element occurrence data (TPWD 2014b), indicates no records of any listed rare, T&E species within one mile of the Proposed Action (Figure 3-2). However, TXNDD shows record of two colonial waterbird rookeries within one-mile of the preferred and alternative sites. (Figure 3-3). TXNDD occurrence data indicates the rookery to the west was last reported in 1986 and the rookery to the south was last reported in 1990. TXNDD data reports the rookery to the west as a nesting colony of the least tern (*Sternula antillarum*) and the rookery to the south as a nesting colony of Olivaceous Cormorant (*Phalacrocorax brasilianus*). It is important to note that TXNDD data is intended to assist users in avoiding harm to rare species or ecological features and that it is not inclusive and cannot be used as presence or absence data.

Table 3-17 THREATENED & ENDANGERED SPECIES – JEFFERSON COUNTY, TX

Species Name	USFWS Federal Listing Status	TPWD State Listing Status	Habitat Requirements	Is Preferred Habitat found within the Proposed Action footprint?
Birds				
American Peregrine Falcon (*Falco peregrinus anatum*)	DL	T	Typically found along the coast and barrier islands	No
Bald Eagle *(Haliaeetus leucocephales*)	DL	E	Found near rivers and large lakes; nest in tall trees or on cliffs near water	No
Peregrine Falcon *(Falco peregrinus*)	NL	T	Typically found along the coast and barrier islands	No
Piping Plover *(Charadrius melodus*)	T	T	Inhabit mudflats, sandy beaches, and shallow wetlands associated with lakes and large rivers	No
Reddish Egret (*Egretta rufescens*)	NL	T	Salt and brackish water wetlands	No
Swallow-tailed Kite (*Elanoides forficatus*)	NL	T	Lowland forest regions; open woodlands; marshes along rivers, lakes, and ponds	No
White-faced Ibis (*Plegadis chihi*)	NL	T	Freshwater marshes, sloughs and irrigated rice fields	No
Wood Stork (*Mycteria americana*)	NL	T	Prairie ponds, flooded pastures, or fields, ditches, and other shallow standing water	No
Fishes				
Smalltooth Sawfish (*Pristis pectinata*)	E*	E	Shallow coastal waters of tropical seas and estuaries very close to shore over muddy and sandy bottoms	No
Mammals				
Black Bear (*Ursus americanus*)	NL	T	Bottomland hardwood forests	No
Louisiana Black Bear (*Ursus americanus luteolus*)	T*	T	Bottomland hardwood forests	No
Rafinesque's Big-eared Bat (*Corynorhinus rafinesquii*)	NL	T	Roost in cave entrances, hollow trees, and in man-made structures	No

Species Name	USFWS Federal Listing Status	TPWD State Listing Status	Habitat Requirements	Is Preferred Habitat found within the Proposed Action footprint?
Red Wolf (*Canis rufus*)	E*	E	Upland and lowland forest, shrubland, river bottoms, coastal prairies and marshes	No
West Indian Manatee (*Trichechus manatus*)	E	NL	Slow-moving rivers, estuaries, saltwater bays and coastal areas in tropical and sub-tropical regions	No
Mollusks				
Louisiana Pigtoe (*Pleurobema riddellii*)	NL	T	Streams and moderate sized rivers	No
Sandbank Pocketbook (*Lampsilis satura*)	NL	T	Small to large rivers with moderate flow	No
Southern Hickorynut (*Obovaria jacksoniana*)	NL	T	Medium sized gravel substrates with low to moderate current	No
Texas Heelsplitter (*Potamilus amphichaenus*)	NL	T	Quiet waters in mud or sand and also in reservoirs	No
Texas Pigtoe (*Fusconaia askewi*)	NL	T	Rivers with mixed mud, sand, and fine gravel in protected areas	No
Reptiles				
Alligator Snapping Turtle (*Macrochelys temminckii*)	NL	T	Perennial waterbodies; deep water of rivers, canals, lakes and oxbows; swamps, bayous, and ponds	No
Atlantic Hawksbill Sea Turtle (*Ertmochelys imbricata*)	E	E	Gulf and bay system; warm shallow waters in rocky marine environments	No
Green Sea Turtle (*Chelonia mydas*)	T	T	Gulf and bay systems; shallow water seagrass beds, open water; barrier island beaches	No
Kemp's Ridley Sea Turtle (*Lepidochelys kempii*)	E	E	Gulf and bay systems; shallow waters of the Gulf of Mexico	No
Leatherback sea turtle (*Dermochelys coriacea*)	E	E	Gulf and bay systems; rarely found along the Texas coast	No
Loggerhead sea turtle (*Caretta caretta*)	T	T	Temperate and tropical waters in the estuaries and continental shelves	No
Northern Scarlet Snake (*Cemophora coccinea copei*)	NL	T	Soft soils, often in open forested areas or developed agricultural land	No

Species Name	USFWS Federal Listing Status	TPWD State Listing Status	Habitat Requirements	Is Preferred Habitat found within the Proposed Action footprint?
Texas Horned Lizard (*Phrynosoma cornutum*)	NL	T	Sandy fields, dunes, open, arid, and semi-arid regions with sparse vegetation	No
Timber Rattlesnake (*Crotalus horridus*)	NL	T	Upland pine and deciduous woodlands, riparian zones, moist bottomland forests, and swamps near permanent water sources	No
Plants				
Chapman's orchid	NL	NC	Wetland pine savannas and savanna swales in hillside seepage bogs	No
Florida ladies-tresses	NL	NC	Moist to wet, open sites in pine-dominated landscapes, open scrub pinelands, meadows	No

* - Species listed by USFWS as Threatened or Endangered but are not listed as having the potential to occur in Jefferson County,
DL – Delisted, E – Endangered, NL – Not Listed, T – Threatened, NC-Not Categorized
Source: USFWS 2014a, and TPWD 2014a

- **Bald and Golden Eagle Protection Act of 1940, (16 USC 668)**

  The Bald and Golden Eagle Protection Act prohibits, without a federal permit, "taking" bald eagles, including parts, nests or eggs. "Taking" is defined as pursuing, shooting or at, wounding, poisoning, killing, capturing, trapping, collecting, molesting or disturbing. It also covers actions that agitate or bother an eagle that ultimately interferes with normal breeding, feeding or sheltering habits and causes injury, death or nest abandonment.

  Breeding populations occur in the eastern half of Texas and along coastal counties from Rockport to Houston (TPWD 2014a) which is farther South than the Port Arthur area. Nonbreeding populations are located in the Panhandle, Central, and East Texas. Bald eagles nest in a variety of species of tall trees (primarily loblolly pine in East Texas) from October to July with peak egg-laying occurring in December. No eagle nests are known or observed to be within the USFWS' 660 feet radius of either proposed construction sites.

- **Migratory Bird Treaty Act of 1918, (16 USC 703)**

  The Migratory Bird Treaty Act (MBTA) states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance within the MBTA's policies and regulations. Federally protected MBTA birds listed in Table 3-17 having the potential to occur in Jefferson County, Texas include the: bald eagle, piping plover, reddish egret, swallow-tailed kite, white-faced ibis, and the wood stork. Both the preferred and alternative sites consist primarily of cleared and dry land with little ground cover, which is not the preferred habitat for the area migratory bird species.

- **Texas Coastal Management Program**

  The Proposed Action will is proposed for unimproved land adjacent to the LNVA' Gulf Canal, railroad tracks and an industrial roadway located wholly within the Texas Coastal Management Boundary as defined in the Coastal Management Program rules (31 TAC §503.1). Except for the industrial park's operational dock sited over Taylor Bayou, the proposed refinery and infrastructure development is protected by the Port Arthur levee from a 100 year flood. (Figure 3-1).

3.4.2 Environmental Consequences of Proposed Action

- **Existing Habitat**

  The Proposed Action is located in a heavily disturbed, gravel laden former industrial area within a previously disturbed tract of land. The Proposed Action will be constructed in upland areas that have been previously disturbed. The proposed action will have limited or no negative effect on the ecological system found within the GTO complex.

- **Section 404 of the Clean Water Act – Waters of the U.S.**

  No existing wetlands or waterbodies were identified within the preferred Proposed Action footprint. The alternative GTO site contains peripheral wetlands on the site. (Chapter 7, Appendix B)

  EO 11990 does not apply because the proposed action site is not on federally owned property. EO 11988 does not apply because wetlands not have been identified within the proposed construction and development areas impacted by the preferred Proposed Action. The GTO barge dock area is adjacent to and elevated above the Taylor Bayou waterline. The existing barge dock slip area requires no modifications or improvements to meet Emerald's operational requirements.

- **Endangered Species Act of 1953**

  No suitable habitat for any listed Threatened and Endangered (T&E) species was observed within the Proposed Action footprint; therefore, the Proposed Action will have no effect on T&E species listed by the USFWS and TPWD having the potential to occur in Jefferson County, Texas. In addition, TXNDD data indicated no records of any rare, T&E species within the Proposed Action footprint (Figure 3-3). Regarding the occurrence data for colonial water-bird rookeries reported in the vicinity if the Proposed Action, the USFWS recommends project activities do not occur within 1,000 feet of colonial water-bird rookeries during nesting season from February 15 to September 1 (Chapter 7, Appendix C). There is approximately 150 foot of above ground pipeline construction planned near the barge dock lying within the 1,000 restricted foot-print. The proposed alternative GTO site's NorthWest extreme corner lies within the colonial water-bird restriction zone. Planned construction, inside those USFWS restricted zones, will be executed outside the USFWS's calendar window if a covered bird species is observed using the documented rookery. The GTO complex receives significant train, barge and truck traffic reducing likelihood for migratory bird nesting near the Taylor Bayou's south shore.

  As part of the T&E species assessment, Emerald requested element occurrence data from TPWD's TXNDD for the Proposed Action area. After reviewing their database, the TPWD anticipates no impacts to rare, T&E species or critical habitat due to the Proposed Action (Chapter 7, Appendix D).

- **Bald and Golden Eagle Protection Act of 1940**

  The Proposed action sites are located in a cleared former industrial area containing no suitable habitat for the bald eagles. Parts of Jefferson County are conducive to hosting bald eagle populations but no known population nests exist within the GTO complex or physically on the either site of Taylor Bayou. Both potential construction sites are over 700 feet from the nearest woodland buffer most likely to host a nest and greater than published US Fish and Wildlife Service Bald and Golden Eagle Management distance Guidelines.

  In the event that a bald eagle is sighted on a flyover, construction activities will stop to allow for the bald eagle to naturally remove itself from the area. If a nest is identified within the area, construction activities will stop and the proper USFWS and TPWD authorities will be notified immediately for further action.

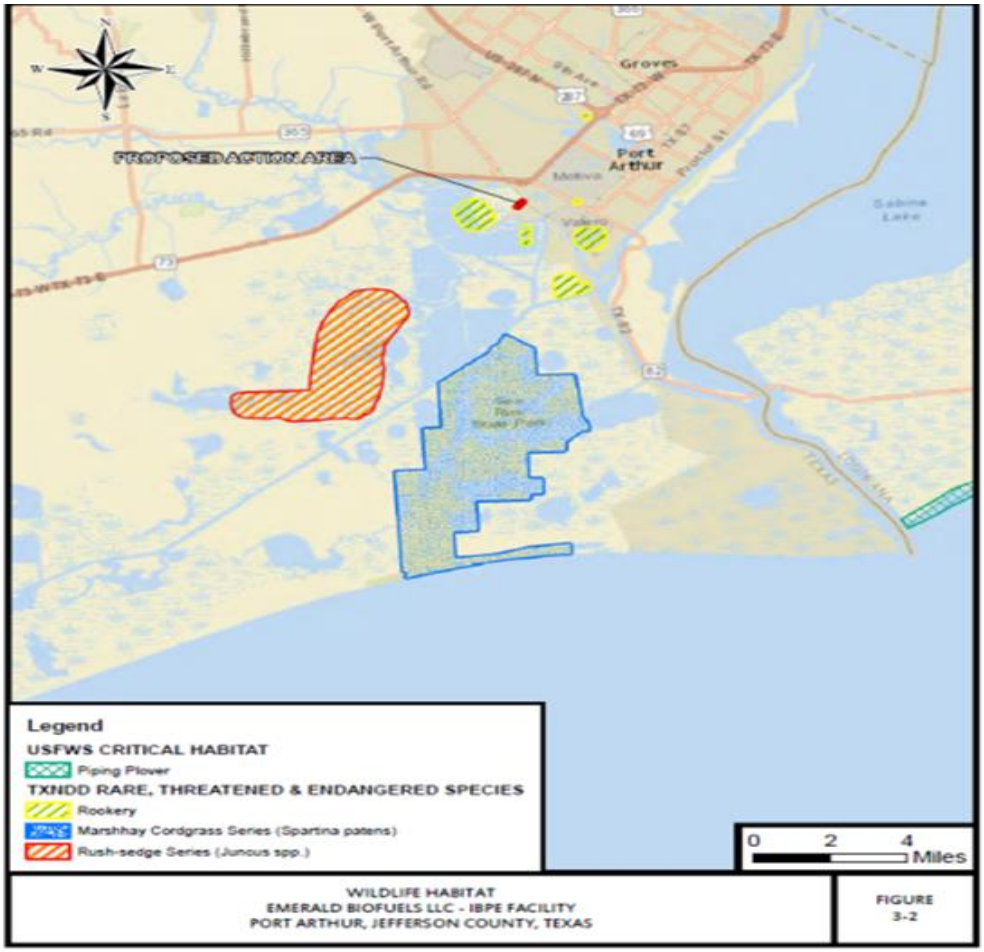
- **Migratory Bird Treaty Act of 1918**

  Suitable habitat for listed migratory birds was not identified within the Proposed Action footprint; therefore, the Proposed Action will have no effect on migratory birds. Construction and operational personnel will be familiar to spot protected migratory birds. In the event that migratory birds are encountered on-site during project construction, every effort would be made to avoid the take of protected birds, active nests, eggs, and/or young to the maximum extent practicable. Critical migratory bird nesting period is February 1 through August 31.

- **All Other Wildlife Species**

  Before initiating construction Emerald plans to develop site wildlife BMPs to minimize impacts and avoiding harassment and harming wildlife species in their surrounding habitat. Employees and on-site contractors and subcontractors will be trained on them.

Figure 3-2 WILDLIFE HABITAT- USFWS AND TXNDPP



- **Texas Coastal Management Program**

  As the site was near the Gulf coast, a Texas Coastal Management Program application was submitted for review and analysis to the Texas General Land Office (GLO). The GLO assessed the impacts of the Proposed Action and deemed it not to adversely affect coastal natural resources. The Proposed Action will be constructed in a manner consistent with the Texas Coastal Management Program enforceable policies. (Chapter 7, Appendix E)

Emerald's existing production model does not plan to use or import non-native or genetically modified algae strains as a refinery feedstock to ensure no residual harm to fishery, recreation and tourism. Their current production model only focuses on using non-biologically reproducible plant oils or greases, as its primary feedstock. Should this model change, the facility owner acknowledges the regulatory official's request to engage in assessing importation impacts to the site's natural environment prior to initiating the action.

Emerald engineered the facility to minimize potential flooding and liquid spills. They plan to send all process and operational wastewaters to the Port Arthur sanitary sewer district. Wastewater contaminate details from the operations are discussed in paragraph 3.2.2.

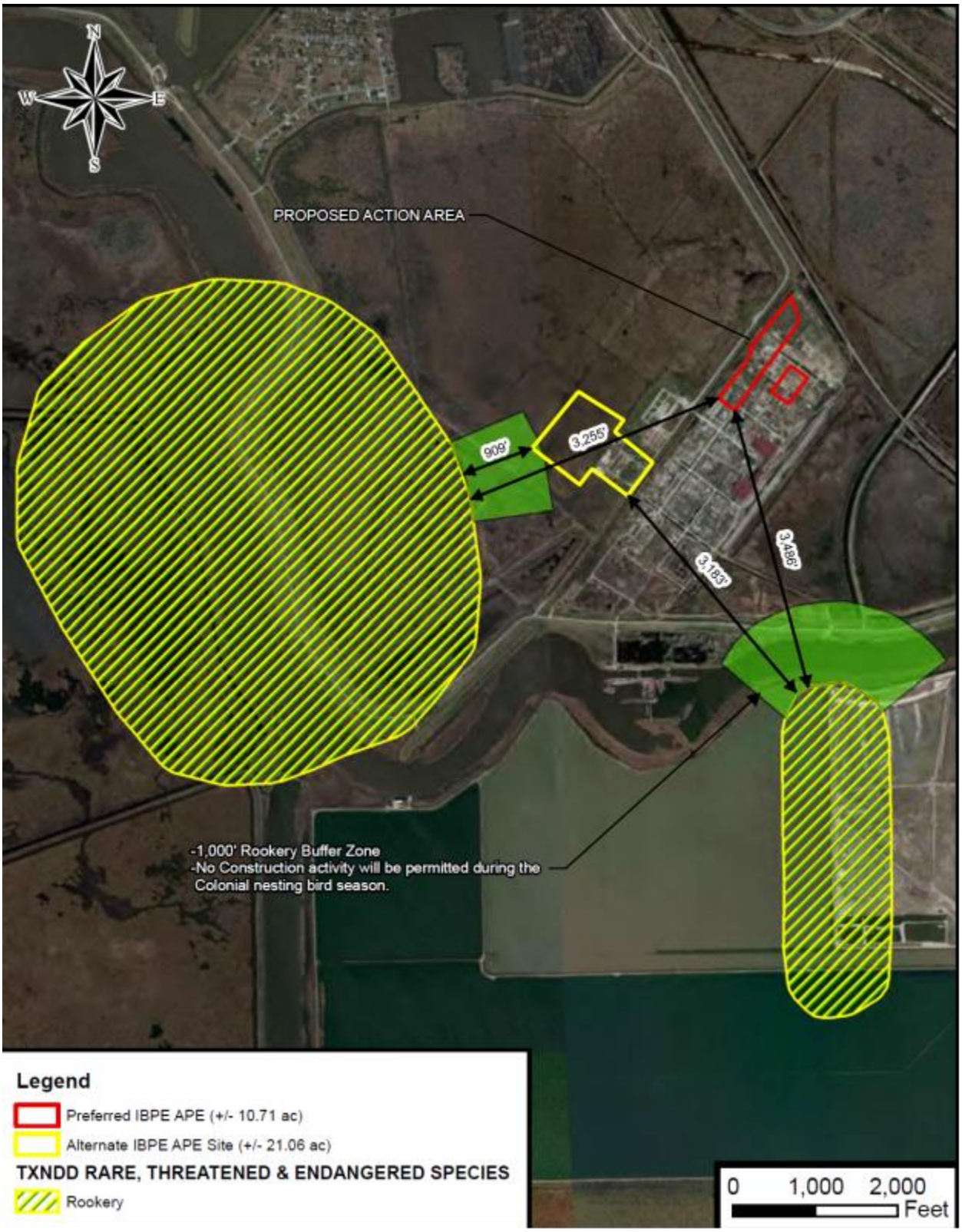
Emerald engineered the facility to use the lowest long wavelength (i.e., amber) light fixtures and bulbs, mounted as low as possible, to direct artificial light downward to minimize and reduce glare, animal's diurnal cycle and night light vulnerabilities.

Upon completion of the Proposed Action, Emerald plans to plant Jefferson County Texas native vegetation on any disturbed land not subject to construction. The entire site's flora today is primarily Bermuda grass, an invasive species.

3.4.3 Environmental Consequences of the No-Action Alternative

Under the No-Action Alternative, the Proposed Action would not likely be constructed at the site. The proposed sites are near the Gulf Coast and on the Central Bird Flyway. The Port Arthur area has significant sites suitable for eagle and migratory bird nesting areas. Neither site is hospitable due to its existing transportation operations and close proximity to heavy industries and petroleum refineries. There are large natural coastal marsh and lowlands to the South and West of the proposed sites which are more conducive to their nesting and breeding, including a number of Texas and Federal Nature preserves and parks. The proposed action is not expected to significant biological and natural resource impacts to the area.

Figure 3-3 WILDLIFE HABITAT-ROOKERIES



3.5 CULTURAL RESOURCES

This section considers the current baseline information that is available for a spectrum of cultural resources that may be impacted by the Proposed Action.

3.5.1 Affected Environment

Included in this summary are archaeological, historical, and architectural resources that occur within the Proposed Action footprint.

3.5.1.1 Archeological

An examination of documentation housed at the Texas Historical Commission (THC), topographic and aerial imagery and the NPS online database for the National Register of Historic Places (NRHP), as well as on-the-ground investigations indicate that the Area of Potential Effects for direct effects has not been previously investigated for cultural and archaeological resources. Seven investigations however have been conducted within a one mile radius of the location since 1972 (Table 3-18) including one for this effort. No archaeological resources or historic properties were located on the ground surface or within subsurface tests conducted.

If during construction cultural resources are discovered, work will be suspended in the vicinity of the discovered materials, and any identified materials including possible human remains will be secured in accordance with applicable Federal and State laws including the National Historic Preservation Act and the Antiquities Code of Texas. The State Historic Preservation Officer of the THC will be contacted immediately and if applicable Native American tribal consultation initiated as per 36 CFR Part 800 – Protection of Historic Properties. The identification of possible human remains will also require notification to local law enforcement authorities as well as the THC.

3.5.1.2 Historical

An examination of documentation housed at the THC, topographic and aerial imagery and the NPS online database for the NRHP, as well as on-the-ground investigations indicate that no historic properties or other cultural resources have been identified within the Proposed Action site footprint. Immediately adjacent to, but outside of the Proposed Action footprint is the Gulf Canal, which occurs approximately 50 meters to the southeast, and appears on the 1943 Port Arthur South, Texas - Louisiana 7.5-minute USGS topographic quadrangle. It is not expected that this resource will be impacted by the Proposed Action. It is also noted on historic topographic imagery that industrial development occurred in phases within the Proposed Action footprint from before 1957 to 1974. (Chapter 7, Appendix F)

Table 3-18 CULTURAL RESOURCE INVESTIGATIONS WITHIN ONE MILE OF THE PROPOSED ACTION

Survey Number	Description	Results	Reference
1937	Letter report summarizing results of Disposal Area 5A	No resources identified	Wooley (1986)
2028	For proposed Taylor Bayou Drainage and Flood Control Project	6 resources identified; none within present project area	Aten (1972)
2051	Letter report summarizing results of Disposal Area 5A	No resources identified	Wooley (1986)
15410	For proposed liquid petroleum pipeline	No resources identified	Leezer (2008)
19808	For proposed CO2 pipeline	No resources identified	Dafoe & Lackowicz (2012)
61018	For proposed IBPF facility	No resources identified	Huebchen (2013)
None assigned	For proposed IBPF facility	No resources identified	Huebchen (2014)

3.5.1.3 Architectural

There proposed sites are graded and semi-improved fields with no existing structures. The complex is near existing petrochemical related industrial and transportation infrastructure complexes with above ground pipelines, liquid storage tanks, roads and rail lines. An earthen Port Arthur Hurricane protection levee lies South and West of the proposed sites (approximately 14-16.5 feet tall according to Jefferson County Drainage District #7).

3.5.1.4 Tribal Consultation

AFRL submitted site consultation letters to five Native American tribes and nations with historical relations to Jefferson County Texas. These included the Alabama-Coushatta Tribe of Texas, Chocktaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Kiowa Indian Tribe of Oklahoma, Tonkawa Tribe of Oklahoma and Tunica-Biloxi tribe of Louisiana. Initial letters were sent on 10 Feb 2014, with a follow-up dated 06 Jun 2014.

3.5.2 Environmental Consequences of Proposed Action

3.5.2.1 Archeological

The preferred site is highly disturbed having served as a partial footprint of a large polyethylene manufacturing complex. There is not expected to be any archeological findings at that site. Part of the alternate GTO site, was not part of the earlier manufacturing complex and therefore not as heavily disturbed, but still has only a slightly higher chance for finding archeological related items.

3.5.2.2 Historical

The field investigation did identify several concrete pads within the Proposed Action footprint for direct effects as well as a now-overgrown asphalted parking lot, but failed to identify temporally diagnostic artifacts, features, architectural elements, etc., that would suggest that any of these features represented construction within the earlier portion of the date range as opposed to the latter. Consequently, it cannot be stated definitively that any of the concrete pads, some of which are currently in use to store industrial equipment and/or refuse, were installed prior to 1974. Therefore, it is expected that the development of the Proposed Action will not impose an adverse effect on these historic-age industrial developments. Furthermore, the lack of temporally diagnostic artifacts, features, or architectural elements to suggest an historic age of the concrete pads suggests that these materials are not eligible for listing in the NRHP under Criteria A-D. Finally, these features are also not recommended as eligible for the NRHP under Criterion Consideration G.

3.5.2.3 Architectural

An examination of documentation, as well as on-the-ground investigations indicate there is no standing architecture present within the proposed APE. There will be no impact to unique architectural properties by executing this effort within their respective view sheds.

3.5.2.4 Tribal Consultation

As part of the Section 106 process established in 36 CFR Part 800.2, the cultural resources investigation documentation of the Proposed Action was provided to six Tribal nations and the Texas Historical Commission (THC) for their review and comment. (Chapter 7, Appendices G & H). A response from the THC, dated December 5, 2014, indicated that no historic properties will be affected by the Proposed Action (Chapter 7, Appendix G). In addition, the Tonkawa Tribe of Oklahoma and Choctaw Nation of Oklahoma were contacted. Tonkawa Tribe has no significant designated historical or historical sites identified within the Proposed Action area (Chapter 7, Appendix H) but requested further communication if potential remains or funerary items are found. The

Chocktaw nation responded that Jefferson County is outside their traditional historical areas and respectfully defers to other Tribes. (Chapter 7, Appendix H).

3.5.3 Environmental Consequences of the No-Action Alternative

Under the No-Action Alternative, the Proposed Action would not be constructed at this time. In the preferred site, as it was previously heavily disturbed with the predecessor polyethylene facility built on the site making the likelihood of recovering historical or cultural artifacts, except previously described demolition debris unlikely. The GTO alternative site has a higher chance of finding artifacts, but it also has been previously disturbed. In Chapter 7, Appendix F, area historical maps show that the sites were built in primarily coastal lowlands until the US Army Corps of Engineers built the Port Arthur levee section in the late 1960s. The proposed action or inaction is not expected to significantly impact cultural or historical artifacts and features due to its historical uses.

3.6 NOISE AND ODORS

3.6.1 Affected Environment

The location of the Proposed Action is in an active industrial park. Currently the industrial park is primarily used for trans-shipping petrochemicals and related liquids. The park's existing dock, four petroleum tanks, surface roads, rail yards and above ground pipelines from the docking area are used today. The site is approximately two miles from two major petroleum refinery complexes, pipeline substations, natural rookeries to include the J.D. Murphree wildlife management area and residential subdivisions. There are shipping and marine interests operating daily in the general area creating noise and odors.

Generally the noise level for the industrial complex today is low. The proposed action sites are shielded from the port and marine activities due to the existing hurricane levy. The site has significant rail trans-shipping activities generating noise levels in the 70-115 dBA range at 100 feet. Truck petrochemical shipments also originate or terminate with the industrial park's port. Diesel truck traffic generates noise in the 80-110 dBA range.

The predominate site odors today are from petrochemical refining and fuel distribution activities originating primarily South and East of the proposed site. Train and truck traffic generate diesel fuel exhaust and fumes along with product transfers.

The Occupational Safety and Health Administration (OSHA) standards limit employees and area receptors from sounds exceeding levels ranging from 90 dBA (A-weighted decibels) for an 8-hour exposure to 115 dBA for a 0.25-hour exposure (29 CFR 1910.95).

3.6.2 Environmental Consequences of Proposed Action

3.6.2.1 Construction

The Proposed Action's construction heaviest activity phase is predicted to last approximately five months. Work during this period will include installation of support piles, earth moving, and fill placement and compaction. Noise associated with the construction of the Proposed Action is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. The closest noise sensitive receptor, a residential neighborhood, is not expected to be exposed to construction noise for a long duration (only during daylight hours); therefore, any extended disruption of normal activities is not expected. Any heavy equipment utilized would generate noise that could affect onsite workers during construction. The construction contractor would require workers to wear hearing protection in accordance with OSHA regulations. Provisions will be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as proper maintenance of muffler systems. Further, minimal odors are expected to accompany construction activities. Tank blanketing with nitrogen will be utilized to control odor of stored organic substances, such as the feedstock surplus.

To evaluate noise impacts to the closest residence to the Proposed Action (approximately 1.02 mile), the 2006 Federal Highway Administration Construction Noise Handbook and the associated Roadway Construction Noise Model (RCNM) were used (FHWA 2006). Table 3-19 depicts construction equipment noise information that is expected to be used during the execution of the Proposed Action. It is anticipated that the impact or vibration pile drivers may be used.

Table 3-19 FHW-CA/T NOISE EMISSION REFERENCE LEVELS & USAGE FACTORS

Equipment Description	Impact Device?	Acoustical Usage Factor (%)	Spec. 721.560 L_{max} @ 50 feet (dBA, slow)	Actual Measured L_{max} @ 50 feet (dBA, slow) (Samples Averaged)
All Other Equipment (> 5 HP)	No	50	85	N/A
Auger Drill Rig	No	20	85	84
Backhoe	No	40	80	78
Bar Bender	No	20	80	N/A
Compactor (ground)	No	20	80	83
Compressor (air)	No	40	80	78
Concrete Mixer (truck)	No	40	85	79
Concrete Pumper (truck)	No	20	82	81
Crane	No	16	85	81
Dozer	No	40	85	82
Drill Rig Truck	No	20	84	79
Dump Truck	No	40	84	76
Excavator	No	40	85	81
Flat Bed Truck	No	40	84	74
Front End Loader	No	40	80	79
Generator	No	50	82	81
Generator <25KVA, VMS Signs)	No	50	70	73
Impact Pile Driver	Yes	20	95	101
Man Lift	No	20	85	75
Pickup Truck	No	40	55	75
Pneumatic Tools	No	50	85	85
Pumps	No	50	77	81
Scraper	No	40	85	84
Sheers (on backhoe)	No	40	85	96
Soil Mix Drill Rig	No	50	80	N/A
Tractor	No	40	84	N/A
Vibratory Pile Driver	No	20	95	101
Warning Horn	No	5	85	83
Welder/Torch	No	40	73	74

Source: 2006 FHWA Construction Noise Handbook, Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

The analysis assumed simultaneous operation with a background noise level of 35 dBA. The results clearly show that the pile drivers create the greatest noise. With the impact pile driver included with no noise mitigation, the L10 noise levels (noise levels expected to be exceeded

only 10% of the time due to random variances) at the target receptor is 58.8 dBA. The Leq (the continuous equivalent noise level – time averaged noise level) is 47.6 dBA. If the impact pile drive is removed from the mix, the L10 is calculated to be 49.7 dBA, and the Leq is 46.7 dBA. Table 3-20 depicts the data inserted into the RCNM model and Table 3-21 displays the results.

Figure 3-4 AREA PROXIMITY IMPACTS

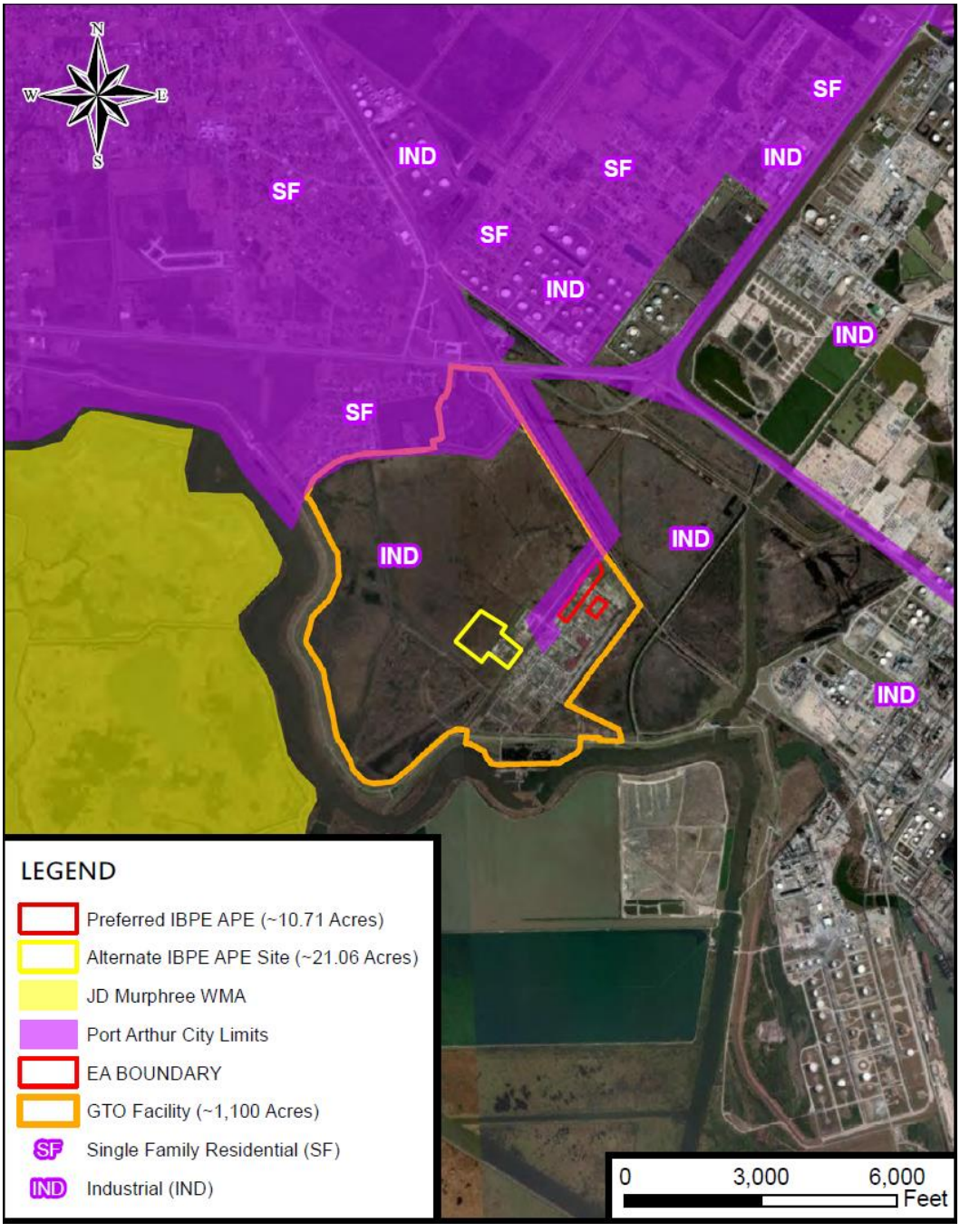


Table 3-20 RCNM MODEL DATA INPUT

Equipment Description	Impact Device?	Usage (%)	Spec L_{max} (dBA)	Actual L_{max} (dBA)	Receptor Distance (feet)	Estimated Shielding
All other Equipment > 5 HP	No	50	85.0	-	4,500	0.0
Compressor (Air)	No	40	-	77.7	4,500	0.0
Crane	No	16	-	80.6	4,500	0.0
Dozer	No	40	-	81.7	4,500	0.0
Dump Truck	No	40	-	76.5	4,500	0.0
Welder / Torch	No	40	-	74.0	4,500	0.0
Man Lift	No	20	-	74.7	4,500	0.0
Pickup Truck	No	40	-	75.0	4,500	0.0
Flat Bed Truck	No	40	-	74.3	4,500	0.0
Pumps	No	50	-	80.9	4,500	0.0
Impact Pile Driver	Yes	20	-	101.3	4,500	0.0

Table 3-21 RCNM MODEL DATA OUTPUT-RESULTS

	Noise Limits (dBA)								Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	**L_{max}**	**L10**	**L_{max}**	**L10**	**L_{max}**	**L10**	**L_{max}**	**L10**	**L_{max}**	**L10**	**L_{max}**	**L10**	**L_{max}**	**L10**
All other Equipment (> 5 HP)	45.9	45.9	50.0	50.0	50.0	50.0	50.0	50.0	None	None	None	None	None	None
Compressor (Air)	38.6	37.6	50.0	50.0	50.0	50.0	50.0	50.0	None	None	None	None	None	None
Crane	41.5	36.5	50.0	50.0	50.0	50.0	50.0	50.0	None	None	None	None	None	None
Dozer	42.6	41.6	50.0	50.0	50.0	50.0	50.0	50.0	None	None	None	None	None	None
Dump Truck	37.4	36.4	50.0	50.0	50.0	50.0	50.0	50.0	None	None	None	None	None	None
Welder/Torch	34.9	33.9	50.0	50.0	50.0	50.0	50.0	50.0	None	None	None	None	None	None
Man Lift	35.6	31.6	50.0	50.0	50.0	50.0	50.0	50.0	None	None	None	None	None	None
Pickup Truck	35.9	34.9	50.0	50.0	50.0	50.0	50.0	50.0	None	None	None	None	None	None
Flat Bed Truck	35.2	34.2	50.0	50.0	50.0	50.0	50.0	50.0	None	None	None	None	None	None
Pumps	41.9	41.8	50.0	50.0	50.0	50.0	50.0	50.0	None	None	None	None	None	None
Impact Pile Driver	62.2	58.2	50.0	50.0	50.0	50.0	50.0	50.0	12.2	8.2	12.2	8.2	12.2	8.2
Total	**62.2**	**58.8**	**50.0**	**50.0**	**50.0**	**50.0**	**50.0**	**50.0**	**12.2**	**8.8**	**12.2**	**8.8**	**12.2**	**8.8**

This modeling analysis indicates that only pile driving may cause noise concerns at a public receptor. These results indicate that, while noise may approach a 50 dBA threshold, Emerald should not need to implement techniques and control measures to reduce noise resulting from piling installation. The construction contractor will be advised that noise in the residential area north of the site must be maintained below 50 dBA. Noise will be monitored during the pile driving phase of work and noise reduction measures will be implemented if necessary. It should be pointed out that not all these pieces of equipment would be expected to be used at the same time. For instance, the noisiest period during construction will likely be the five-month period where piling will be driven and site preparation will be done. This includes pile driving, dump trucks, dozers and scrapers. There will probably be no cranes, welders, manlifts or pumps. Similarly, outside of this five month window, there will be no pile driving, dozers or dump trucks.

This modeling shows that noise at the receptor is expected to below 50 dBA during the construction phase of the project. If field data indicate it to be necessary, noise mitigation may be used on pile driving equipment. Therefore, no adverse community reaction would be expected as a result of noise levels.

3.6.2.2 Operational

There will be normal chemical production and transportation related noises. Overall the production layout is highly automated with few employees expected to experience noise (dBAs) over OSHA action levels in operational facility. During routine operations there will be manual material transfer noise from forklifts, automatic cranes and other common material handling equipment. Facility equipment and equipment maintenance operations personnel are most likely to experience the highest noise impacts. The facility's Hydrogen compressor is expected to have one of the highest noise risks with a 85-95 dBA. The facility design intentionally separates the Hydrogen compressor from personnel by placing into acoustical dampers and using other engineering controls. Emerald plans to purchase and site the equipment to minimize operational noise. They also plan to run operational noise testing as part of their technology start-up validation efforts. As the closest non-employee resident is over a mile away, operational noise is not expected to significantly impact their quality of life.

3.6.3 Environmental Consequences of the No-Action Alternative

Under the No-Action Alternative, the Proposed Action would not be constructed and the area will retain its current noise and odor characteristics. The site is predominately a logistics center with active rail, road and water access and will continue even without executing this planned construction. Executing the proposed action will not significantly increase or impact the noise or odor characteristics to the housing community North of Tiger Bayou.

3.7 HAZARDOUS MATERIALS AND WASTE STREAMS

3.7.1 Affected Environment

The Proposed Action and the surrounding areas were formerly used for industrial purposes, and therefore the proposed future usage of the area will continue with the intended usage.

As documented elsewhere in this document, portions of the GTO complex, including the preferred site, stood a polypropylene manufacturing complex that was demolished in or about 2001. Areas of residual chemical contamination in soil and groundwater continued to be regulated after the plant was shut down and demolished under the federal Resource Conservation and Recovery Act (RCRA) and state regulations. These areas were tested and characterized by TCEQ, and were voluntarily cleaned up under TCEQ's Industrial and Hazardous Waste (IHW) Corrective Action Program (30 TAC 335). The previous facility cleanups were covered under TCEQ's IHW Solid Waste Registration No. 30508 and involved approximately 74 solid waste management units (SWMUs) throughout its footprint currently on GTO property. Nine of these SWMU clean-ups were located in-part or totally within Emerald's preferred IBPE parcel. Table 3-22 lists the nine waste management units of these, two (#'s 50 and 67) were closed under RRS1 and seven were closed under RRS 2.

Within the IHW program, waste management units may be cleaned up and closed under TCEQ's Risk Reduction Program. The Risk Reduction Program is a three tiered system based on residual risk remaining onsite after cleanup.

- Risk Reduction Standard 1 – unit closure and cleanup to background contaminant levels.
- Risk Reduction Standard 2 – unit closure and cleanup to health-based standards/criteria
- Risk Reduction Standard 3 - unit closure and remediation with controls

Closure reports for these nine and all other SWMU's located at the GTO Facility property were submitted to and accepted by the TCEQ's Remediation Division, Corrective Action Section in 2004 and 2005. These units, constituting all SWMU's located on the Emerald parcel are now considered closed and remediated by the TCEQ and USEPA, and no further actions are required on them.

Table 3-22 WASTE MANAGEMENT UNITS

WMU No.	Description	Unit Type	SWR =30508	
5	Misc. storage of wastes in roll-off bins in plant	Miscellaneous storage containers	3/29/2005 letter from Equistar to TCEQ submitting report. **RRS #2**	4/21/2005 letter from TCEQ requesting response by 5/1/2005. **ATTACHMENT?**
9	Storage of recovered oil from oily water separator.	Tank (surface)	9/30/2004 letter from Equistar to TCEQ submitting report for NOR#9. **RRS #2**	1/20/2005 letter from TCEQ to Equistar. Comment addressed to NOR 9 - a. Sample for PAH's. b. Permeter smpl to bckg. c. Deed record.
32	Sump originally used to collect domestic sewage. Water from the oily water separator unit NOR 58 was pumped to this unit.	Sump	9/30/2004 letter from Equistar to TCEQ submitting report for NOR#32. **RRS #2**	1/20/2005 letter from TCEQ to Equistar
33	Sump used to collect drips and drains from the nitrogen compressor area prior to discharge into plant wastewater conveyance system.	Sump	NO SUBMITTAL LETTER	1/20/2005 letter from TCEQ to Equistar. Comment addressed to NOR 33 - a. Sample for PAH's. b. Permeter smpl to bckg. c. Deed record.
41	East Side Burn Pit (BP)	Surface impoundment	1/19/2005 letter from Equistar to TCEQ submitting report for NOR#41. **RRS #2**	2/21/2005 letter from TCEQ requesting response by 5/1/2005. **ATTACHMENT?**
50	Plastic Burn off areas.	Drip pad	4/28/2004 letter from Equistar to TCEQ submitting report for NOR#50. **RRS #1**	7/20/2004 letter from TCEQ to Equistar accepting closure of NOR #50
54	Oil/water separator located at fuel tanks	Sump	1/19/2005 letter from Equistar to TCEQ submitting report for NOR#54. **RRS #2**	2/21/2005 letter from TCEQ requesting response by 5/1/2005. **ATTACHMENT?**
58	Oily water separator, used for main plant	Sump	9/30/2004 letter from Equistar to TCEQ submitting report for NOR#58. **RRS #2**	1/20/2005 letter from TCEQ to Equistar. Comment addressed to NOR 58 - a. Sample for PAH's. b. Permeter smpl to bckg c. Deed record.
67	Waste Motor oil containment area	Drip pad	NO SUBMITTAL LETTER	1/20/2005 letter from TCEQ to Equistar. Unit #67 Approved for Closure.

3.7.2 Consequences of Proposed Action

3.7.2.1 Construction

While every construction project is different depending on the ultimate technology and purpose of the resulting structure, it involves certain hazardous and non-hazardous materials resulting in specific wastes. The preferred site has been cleaned to TCEQ industrial reuse standards. While unexpected, there is potential of uncovering and disturbing unknown contamination residue from the previous industrial operations on the site. If there is a discovery, TCEQ will be notified promptly.

General construction non-hazardous wastes will be consolidated for recycling or disposal into trash receptacles or other suitable containers for landfilling in the Port Arthur area.

Facility construction involves a number of processes like: site preparation, clearing and leveling, trenching and connecting utilities, pouring foundation and footers, installing equipment, building exterior buildings, assembling production systems, the storage tanks and final site clean-up. These actions require using hazardous materials resulting in the storage, use and generation of regulated hazardous wastes. These materials have various general characteristics including but not limited to: flammable materials, compressed gases, corrosives, materials with toxic properties, universal wastes that require handling and disposing in accordance with applicable regulations. (Department of Transportation Regulations 49 CFR 171-177 and 40 CFR 260-270).

3.7.2.2 Operations

The process of turning renewable oils and fats into diesel fuel requires the use of certain chemicals. These chemicals, along with their projected use quantities, are itemized it Table 3-23 below. Also designated on this list is whether a substance used or produced by the Proposed Action is:

- A Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substance (and, if so, its Reportable Quantity (RQ));
- Listed on the Toxics Release Inventory (Emergency Planning and Community Right-to-Know Act (EPCRA) section 313);
- A regulated hazardous waste listed in 40 CFR 261 (Resource Conservation & Recovery Act (RCRA);
- Listed on the U.S. Department of Transportation (USDOT) Hazardous Materials Table in 49 CFR 172.

During the pretreatment process of the Proposed Action, the initial feedstocks that will be used consist primarily of vegetable oils and animal fats, which are nontoxic. Due to the nontoxic nature and proposed control measures that will be implemented, air and odor emissions will be minimal. All storage tanks used for storing the feedstock will be kept within adequate secondary containment in the event of a potential spill or tank rupture. Other components of the pretreatment process will be stored in such a way as to minimize emissions or release of potential spills into the environment. Phosphoric acid and process caustics, are damaging to skin and other human tissue, have low vapor pressures and will be stored within adequate secondary containment. Spills involving both can be neutralized. Bleaching clay, silica, and diatomaceous earth are powdery and will be kept within an enclosed wet system to prevent emissions. Transfer of these powdery substances from trucks to storage bins will use bag houses to control dust emissions. Volatile emissions due to loading and unloading of liquid feedstocks and products will be insignificant. Of the substances handled, liquefied petroleum gas is the most volatile, but will be handled in an enclosed pressurized system. Though not as volatile, Green Naphtha will

be kept in storage tanks with a floating roof, to minimize emissions during storage, and any vapors generated during the loading process will be routed to a flare for incineration (and will be permitted through the TCEQ under a minor source air emissions permit). Furthermore, during the pretreatment process, wastewater will be generated through contact with the feedstock for the removal of contaminants and soaps. The water will then be collected and treated through a dissolved air flotation wastewater treatment system, where it will then be subject to a permitted discharge into the Port Arthur Wastewater Treatment Plant (WWTP) system.

Table 3-23 CHEMICAL USE AND REGULATED STATUS

INPUT	OUTPUT	RATE	UNITS	CERCLA Hazardous Substance & RQ	EPCRA Section 313	RCRA Haz. Waste	USDOT Hazardous Material
Fats/Oils		6,825	BBL/DAY	-	NO	NO	NO
Hydrogen		14	MMSCFD	-	NO	NO	YES
Natural Gas		0.194	MMSCFD	-	NO	NO	YES
	Diesel	5,995	BBL/DAY	-	NO	NO	YES
	Naphtha	416	BBL/DAY	-	NO	NO	YES
	LPG	479	BBL/DAY	-	NO	NO	YES
Caustic		3,672	LBS/DAY	1,000 LB	NO	NO	YES
Phosphoric Acid		1,875	LBS/DAY	5,000 LB	NO	NO	YES
Silica		2,566	LBS/DAY	-	NO	NO	NO
Bleaching Clay		2,566	LBS/DAY	-	NO	NO	NO
Diatomaceous Earth		1,284	LBS/DAY	-	NO	NO	NO
Dimethyl Disulfide (DMDS)		532.80	GAL/DAY	-	NO	NO	YES
	Recovered Sulfur	2.15	TONS/DAY	-	NO	NO	NO
	Soapstock /Gums	366.1	GAL/DAY	-	NO	NO	NO
Iron Chelate – Sulfur Control		309.4	GAL/DAY	-	NO	NO	NO
Diethanolamine (DEA)		7.0	GAL/DAY	100 LB	YES	NO	YES
	Spent Clay	8.39	TONS/DAY	-	NO	NO	NO

BBL - barrels; GAL – gallons; MMSCFD – million standard cubic feet per day; LBS - pounds

The pretreatment process will generate two waste streams; soapstock and spent silica/clay/DE. Soapstock is produced by the caustic refining portion of the pretreatment process and consists of fatty acid soaps, feedstock oils, phosphatides/gums in the feedstock and water. This material is nonhazardous and can be sold as animal feed. Soapstock will be stored in a tank to await offsite shipment, and will be stored inside secondary containment per the site-specific SPCC plan. Emerald will use a deionized water wash to help remove residual soaps and other contaminants out of the feedstock at a rate of about 10 gallons per minute. Spent water from this process will contain residual soaps and other materials. It will be treated in a DAF unit to remove entrained oils/greases and solids, before being discharged to the City of Port Arthur WWTP system. Silica/clay/DE is recovered as a wet filter cake in a roll-off container. It is a non-liquid, non-hazardous waste, and will be disposed in the local, nonhazardous waste landfill.

The processing stage will operate under conditions that are generally of low environmental impact. The equipment used will run off of a combination of natural or lean gas, and emissions will be low. Any acidic gasses produced will be removed by the amine system, filtered, and converted into a more benign and easily removed form (from hydrogen sulfide (H_2S) into elemental sulfur). Wastewaters within this processing stage will contain H_2S and ammonia which will be passed through a sour water stripper and any emissions routed to the process heater to be burned off prior to discharge of the cleaned wastewaters into the Port Arthur WWTP system. The entire process area will be located on a non-pervious concrete surface enclosed by secondary containment curbing to prevent the potential release of any spills.

Biofuels production, by nature, is a sustainable, secure, and renewable alternative to fossil fuels. The Proposed Action will generate few waste by-products. These by-products consist primarily of elemental sulfur, wastewater, and pretreatment filter cake. The few waste by-products generated will be converted into less harmful, easily disposed of forms, reused back into the process, burned off, cleaned then discharged, or disposed of via nonhazardous waste landfill. The Proposed Action will be designed to minimize, to the maximum extent practical, or eliminate air emissions, potential spills or releases, or discharges of a harmful nature into the environment.

In addition the facility would generate universal wastes, including used equipment oil, fluorescent and high-intensity discharge light bulbs, and batteries. Depending on the types of universal wastes generated, a licensed universal waste transportation company for that particular type of waste would transport such materials to a licensed disposal facility.

3.7.3 Environmental Consequences of the No-Action Alternative

Under the No-Action Alternative, the Proposed Action capability would not be constructed resulting in no new hazardous materials or wastes introduced into the area. Except for the

required Hydrogen gas and the process acids and caustics, most process materials involve minor qualities and relatively benign characteristics for a heavy industrial process setting. Chemical operations have been engineered to incorporate controls minimizing worker and neighbor risks and environmental damage in the case of a catastrophic spill or fire. The proposed action is not expected to impact or significantly increase hazardous material or waste generation if compared with other more traditional heavy industry petrochemical production facilities that may consider the site.

3.8 CUMULATIVE IMPACTS

The term "cumulative effect" is defined in the CEQ regulations as "the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).

This chapter provides an overview of relevant past, present, and reasonably foreseeable actions in the vicinity of the Facility and presents the cumulative effects analysis.

It is known that the GTO industrial park ownership plans to continue expanding its petrochemical, chemical and logistical value to the existing Port Arthur region targeting expansion of tenants with synergistic industries at the site.

There are a few resources that the proposed facility construction and operations would make a measurable contribution to the immediate area. These include air quality, biological/natural, noise and odors, and utilities and infrastructure. These are addressed in more detail below:

3.8.1 Past, Present, and Reasonably Foreseeable Future Actions

As stated in Section 2.4, the GTO Industrial park is a 1,100 acre site in the Port Arthur Tx region. The city of Port Arthur was established in the 1890s. The GTO site is generally South-West of the Port Arthur city limits in Jefferson County. The area was previously a coastal lowlands until the Middle 1900s. The US Army Corp of Engineers built the Lower Natches Valley Authority retention dams for flood control and fresh water in the 1930s; the earthen Port Arthur levee system was initiated in 1966, which now serves as the Western border of the current industrial park, and as a flood control measure for the river valleys that include Port Arthur.

In the first five years in 20th Century oil was discovered in the area and several large oil refineries flourished. The companies later became known as Gulf Oil and Texas Oil Company. Oil and petrochemical companies consolidated in and around the Port Arthur area due to available raw materials and technology synergies.

During the 1950s the Port Arthur area was considered the world's petroleum refining capital. Portions of the now GTO industrial park complex previously contained agricultural land and other areas had industrial development, including a polyethelene manufacturing facility. That facility was closed and demolished in the late 1980s and early 1990s.

Land North of Tiger Bayou is zoned residential with several housing sub-divisions; West and immediately South of the industrial park lies several natural areas including National Wildlife Management Areas primarily operated by the Texas Park and Wildlife Department; and East of the proposed site hosts heavily industrialized sites hosting numerous pipelines, oil and petrochemical refineries and related activities.

3.8.2 Cumulative

This analysis addresses resources that may be subject to cumulative impacts from the facility in combination with other actions that have taken place or are expected to take place in the area.

3.8.3 Specific Resource Impacts

3.8.3.1 Air Quality and Meteorology

As discussed in Section 3.1, the proposed refinery will emit less than 100 tons per year of any criteria pollutant, and is considered by TCEQ to be a minor air emission source. The area currently meets ambient air quality standards. All new facilities are required to comply with existing air permitting requirements to prevent construction and operations emissions from exceeding applicable thresholds. The proposed IBPE design will not significantly impact current air quality as it falls below Texas Title V permitting requirements. However, if the industrial and logistical park grows and increases occupancy, local air quality maybe impacted in the future. In addition, federal and state air quality standards are increasingly being scrutinized and restrictive which could detrimentally impact the petrochemical and oil refinery related industries in and around Port Arthur, including this renewable oil refinery.

3.8.3.2 Water Resources

As discussed in Section 3.2, the GTO industrial park owners own a commercial barge dock for tenants on Taylor Bayou with a water depth of 12 feet. If larger marine transport is required there maybe upgrades necessary to accommodate them. If GTO officials determine that developing a deeper draft port is necessary, it requires initiating formal discussions with the US Army Corps of Engineers, Environmental Protection Agencies, Texas Parks and Wildlife, US Fish and Wildlife and other regulatory organizations.

3.8.3. 3 Utilities and Infrastructure

As discussed in paragraph 3.3, Port Arthur potable water and sanitary sewer mains exist at the Highway 73 frontage and will be accessed to provide these utilities for the proposed action and future development. GTO plans to build the pipeline adjacent and incorporated into previously disturbed access road right of ways. This will be common industrial park infrastructure and shared among current and future tenants.

The industrial complex is serviced by three transportation modes. The rail line and the barge docks are expected to be the primary modes to ship both the raw materials and finished products to market. The rail line and barge infrastructure are capable of meeting the current mission and the additional throughput requirement by the proposed action with additional headspace available for future expansion. The GTO industrial park has an industrial quality access road for employees and shipping purposes leading to Highway 73. Trucking is expected to be the smallest fraction of the transportation mix and primarily used for short distance customers and consumable operational deliveries. As the industrial park grows with new and more diversified tenants increasing cargo volumes, the road and dock will degrade quicker or require more maintenance, replacement or adding new and currently unanticipated capacities sooner.

There are many petroleum, Hydrogen and related product pipelines in and around the Port Arthur areas. As a site with previous petroleum refining and chemical capability many raw materials, intermediates and finished products are transported through pipelines. Hydrogen pipelines are known to transect the industrial park. Once purchase agreements are in place for the commodities with the owners, connections to existing Hydrogen pipeline(s) will be completed. If appropriate, in the future GTO may investigate installing pipeline(s) to move this finished product to one or more neighboring refinery customers.

There is sufficient electrical power available from the existing Entergy high voltage power lines for any future IBPE or GTO growth.

3.8.3.4 Biological/Wildlife

As discussed in Section 3.4, the GTO property and the proposed refinery are located adjacent to and across the Taylor Bayou from established protected and un-protected coastal lowlands and wildlife management areas run by numerous entities, including the Texas Parks and Wildlife. Protected and endangered birds are known to inhabit the Jefferson County and similar Gulf Coast marshes and woodlands. While the two proposed sites consist of non-native ground vegetation and are clear of avian wildlife favorable habitat, future development may impact more favorable native biological species and habitats. Regulated wetlands are known to exist within the park's borders.

3.8.3.5 Noise and Odors

As discussed in Section 3.6, the GTO property and the proposed refinery are located near the South-Western boundary of Port Arthur Texas. As the industrial park is located near the coast and surrounded by residential, industrial and natural wildlife areas, noise and odors experienced at the site will be variable and weather dependent. As is typical with coastal climates, the dominate wind come off the Gulf and inland waterways and heads inland. The direction and proximity to the coast suggests that the industrial coastline and the park's existing and increasing transportation segments will continue to be the source for the preponderance of noise and odors in the area even after completing the proposed construction. As additional logistical and related chemical industries expand in the park, the accompanying local noise and odors will be that originate there and in the general area.

3.8.3.6 Hazardous Materials and Wastes

The government and Emerald do not know of other potential GTO tenants that may inhabit the industrial park. They are expected to attract petroleum or petro-chemical manufacturing or transship similar commodities as a logistical center. At this time, future resource impacts are not known and highly dependent on future tenants.

3.9 IRREVERSIBLE/IRRETRIEVABLE IMPACTS

This section describes the irreversible and irretrievable commitment of resources resulting from the Proposed Action. An irreversible commitment of resources is the use or destruction of a resource such that it cannot be replaced or restored over a long period of time. An irretrievable commitment of resources is the loss of production or use of a natural resource and the lost opportunities for the period when the resource cannot be used.

The Proposed Action would require an irretrievable commitment of labor, energy, and materials during construction activities. The use of materials would be irretrievable, except to the extent that some may be recycled. Additionally, water use would constitute an irretrievable resource commitment; however, it would not be an irreversible commitment since the water resources would be returned to the environment by water treatment facilities.

The Proposed Action would not cause an irretrievable commitment of land because it will be constructed within the boundary of an existing industrial facility.

The minimal irretrievable changes associated with the Proposed Action would be justified by the projected decrease in GHG emissions, as well as the reduction of the nation's dependence on imported crude oil to supply its energy needs.

CHAPTER 4

LIST OF PREPARERS

Emerald Biofuels LLC

Robert L. Fleming III (Trey)
Vice President of Engineering and Technology
B.S., Chemical Engineering
M.S., Civil Engineering
Registered Professional Engineer, #11,736 (MS)

Morris P. Hebert, Inc.

Marie Taylor
Environmental & Regulatory Project Manager
B.S., Ocean and Coastal Resources
M.A.R.M, Master of Marine Resources Management

Shannon Cass
Environmental Scientist
B.S., Environmental Science
B.S., Marine Biology

Karl Huebchen
Principle Investigator / Cultural Resources Project Manager
Registered Professional Archeologist
B.A., Anthropology with a focus in Archaeology
M.A., Anthropology with a focus in Archaeology
M.S., Environmental Policy and Management with a focus in Environmental Planning (expected 2014)

CHAPTER 5

LIST OF CONSULTING AGENCIES

City of Port Arthur

Environmental Protection Agency

National Park Service

Texas Commission on Environmental Quality

Texas General Land Office

Texas Historical Commission

Texas Parks and Wildlife Department

United States Army Corps of Engineers

United States Department of Agriculture – Natural Resource Conservation Service

United States Department of Transportation- Federal Railroad Administration

United States Fish and Wildlife Service

CHAPTER 6
ACRONYMNS AND ABBREVIATIONS

ADBPP	Advanced Drop-In Biofuel Production Project
AF	Air Force
AMCV	Air Monitoring Comparison Values
APE	Area of Potential Effect
APWL	Air Pollutant Watch List
AQCR	Air Quality Control Region
BPA	Beaumont/Port Arthur
BBL	Barrels
bpd	barrels per day
bpsd	barrels per standard day
BGEPA	Bald and Golden Eagle Protection Act of 1940
BMP	Best Management Practice
CAA	Clean Air Act
CARB	California Air Resources Board
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CI	Carbon Intensity
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CWA	Clean Water Act
DAF	dissolved air floatation
dBA	A-weighted decibels

DE	diatomaceous earth
DoD	Department of Defense
DPA	Defense Production Act
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EISA	Energy Independence and Security Act
Emerald	Emerald Biofuels LLC
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ETJ	extraterritorial jurisdiction
ESA	Endangered Species Act
FEMA	Federal Emergency Management Act
FOP	Federal Operating Permit
GHG	Greenhouse Gases
gpm	gallons per minute
gpy	gallons per year
GTO	GT OmniPort
GTO Facility	GT OmniPort Industrial Park Facility
HAP	Hazardous Air Pollutant
H_2S	hydrogen sulfide
IBPE	Integrated Biofuels Production Enterprise
IHW	Industrial and Hazardous Waste
IICEP	Intergovernmental and Interagency Coordination for Environmental Planning
LCA	Lifecycle Assessment
LNVA	Lower Neches Valley Authority

LPG	liquid petroleum gas
MBTA	Migratory Bird Treaty Act of 1918
mgy	million gallons per year
MMSCFD	million standard cubic feet
mmtpy	million metric tons per year
MSW	municipal solid waste
NAAQS	National Ambient Air Quality Standard
NEPA	National Environmental Policy Act
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NNSR	Non-attainment New Source Review
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NOAA/NMFS	National Oceanic Atmospheric Association, National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	New Source Review
NSPS	New Source Performance Standards
O_3	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
PBR	Permit by Rule
PD	Presidential Determination
PM	particulate matter
ppb	parts per billion
ppm	parts per million

PSD	Prevention of Significant Deterioration
PSM	Process Safety Management
PV	pressure-vacuum
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
RQ	Reportable Quantity
SIP	State Implementation Plan
SO_2	sulfur dioxide
SPCC	Spill, Prevention Control and Countermeasures Plan
SWMU	Solid Waste Management Unit
SWPPP	Stormwater Pollution Prevention Plan
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
T&E	threatened and endangered
THC	Texas Historical Commission
TIA	Technical Investment Agreement
TPDES	Texas Pollutants Discharge and Elimination System
TPWD	Texas Parks and Wildlife Department
tpy	tons per year
TXNDD	Texas Natural Diversity Database
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation

USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compound
WWTP	Wastewater Treatment Plant

CHAPTER 7
AGENCY CORRESPONDENCE & SUPPORTING DOCUMENTATION

Relevant agency correspondence and documentation is included in the following appendices.

APPENDIX A

U.S. DEPARTMENT OF AGRICULTURE – NATURAL RESOURCE CONSERVATION SERVICE FARMLAND PROTECTION POLICY ACT

USDA
United States Department of Agriculture

Natural Resources
Conservation Service

State Office

101 S. Main Street
Temple, TX 76501
Voice 254.742.9800
Fax 254.742.9819

November 25, 2014

Morris P. Hebert
283 Corporate Drive
Houma, Louisiana 70360

Attention: Marie Taylor

Subject: LNU-Farmland Protection
Proposed Integrated Biofuels Production Enterprise Facility
Jefferson County, Texas

We have reviewed the information provided in your correspondence dated November 17, 2014 concerning the integrated biofuels production enterprise facility in Jefferson County, Texas. This review is part of the National Environmental Policy Act (NEPA) evaluation for Department of the Air Force (DOAF). We have evaluated the proposed site as required by the Farmland Protection Policy Act (FPPA).

The proposed project is considered to be "prior converted" and is exempt. The Farmland Conversion Impact Rating (Form AD-1006) indicating the exemption is enclosed. We encourage the use of accepted erosion control methods during the construction of this project.

If you have any questions, please contact me at (254) 742-9826, Fax (254) 742-9859 or by email at micki.yoder@tx.usda.gov.

Sincerely,

Micki Yoder

Micki Yoder
NRCS Soil Conservationist

Attachment

An Equal Opportunity Provider and Employer

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request: 11-17-14		
Name of Project: **Integrated Biofuels Production Facility**	Federal Agency Involved: **Department of Defense, Air Force**		
Proposed Land Use: **Industrial**	County and State: **Jefferson County, TX**		
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 11-19-14	Person Completing Form: **Micki Yoder**	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☐ NO ☒	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount of Farmland As Defined in FPPA Acres %	
Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 11/25/2014	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site				
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide Important or Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)				

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160				
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100				
Total Site Assessment *(From Part VI above or local site assessment)*	160				
TOTAL POINTS ***(Total of above 2 lines)***	260				

Site Selected	Date Of Selection	Was A Local Site Assessment Used?
		YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form: Date: 11/07/14

Form AD-1006 (03-02)

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request: 11-17-14		
Name of Project: **Integrated Biofuels Production Facility**	Federal Agency Involved: **Department of Defense, Air Force**		
Proposed Land Use: **Industrial**	County and State: **Jefferson County, TX**		
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 11-19-14	Person Completing Form: **Micki Yoder**	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☐ NO ☒	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount of Farmland As Defined in FPPA Acres %	
Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 11/25/2014	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site				
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide Important or Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)				

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160				
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100				
Total Site Assessment *(From Part VI above or local site assessment)*	160				
TOTAL POINTS *(Total of above 2 lines)*	260				

Site Selected	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐
Reason For Selection:		
Name of Federal agency representative completing this form:		Date: 11/07/14

Form AD-1006 (03-02)

APPENDIX B

U.S. ARMY CORPS OF ENGINEERS – CLEAN WATER ACT, SECTION 404

283 Corporate Drive
P.O. Box 3106
Houma, LA 70361-3106

(985) 879-2731 VOICE
(985) 876-9052 FAX

Morris P. Hebert, Inc.
client focused solutions

Job No. 11710-00

One Sterling Plaza
10101 Southwest Freeway, Suite 620
Houston, TX 77074

(713) 219-1470 VOICE
(713) 219-1471 FAX

March 25, 2014

U.S. Army Corps of Engineers
Galveston District – Regulatory Branch
ATTN: Kenny Jaynes
P.O. Box 1229
Galveston, Texas 77553-1229

RE: Emerald Biofuels, LLC - Proposed Integrated Biofuel Production Enterprise Facility
Port Arthur, Jefferson County, Texas
Request for Wetland Delineation Verification and Jurisdictional Determination

Dear Mr. Jaynes,

Enclosed please find a wetland delineation report prepared by Morris P. Hebert, Inc. (MPH) for Emerald Biofuels, LLC (Emerald) for a proposed Integrated Biofuel Production Enterprise Facility. MPH request that the U.S. Army Corps of Engineers, Galveston District review the report and provide a verification and jurisdictional determination. The project boundary, as shown in the report, is located in Port Arthur, Jefferson County, Texas.

The wetland delineation was conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0).

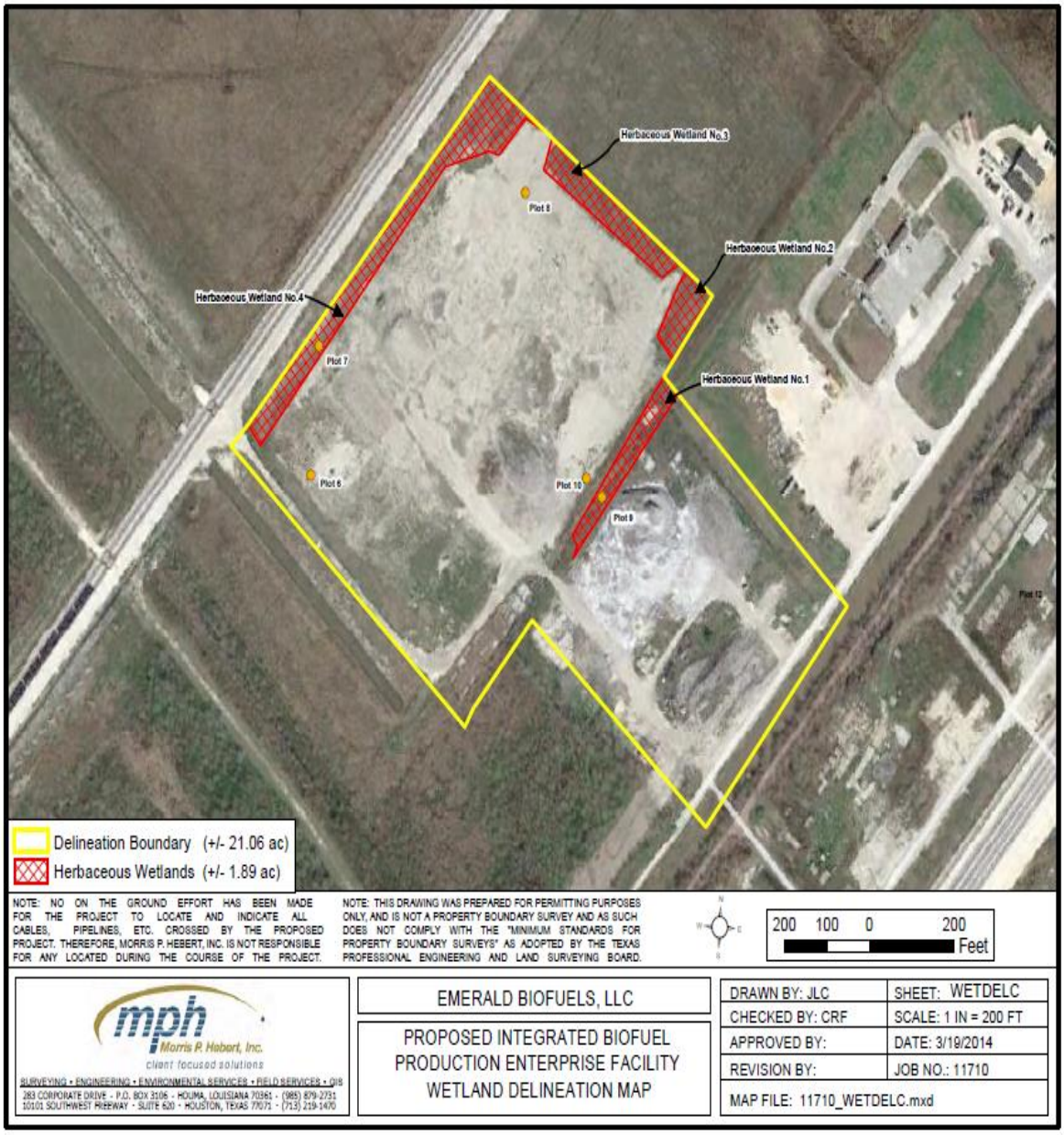
Should you have any questions or require additional information, please do not hesitate to contact me at mtaylor@mphinc.com or (985) 853-3969. Please send all correspondence to my attention at Morris P. Hebert, Inc., 283 Corporate Drive, Houma, Louisiana 70360.

Sincerely,

Marie Taylor

Marie Taylor
Environmental Project Manager

Enclosures: Wetland Delineation Report


Herbaceous Wetland No.3
Herbaceous Wetland No.2
Herbaceous Wetland No.4
Herbaceous Wetland No.1
Plot 8
Plot 7
Plot 6
Plot 10
Plot 9
Plot 12
Delineation Boundary (+/- 21.06 ac)
Herbaceous Wetlands (+/- 1.89 ac)
NOTE: NO ON THE GROUND EFFORT HAS BEEN MADE FOR THE PROJECT TO LOCATE AND INDICATE ALL CABLES, PIPELINES, ETC. CROSSED BY THE PROPOSED PROJECT. THEREFORE, MORRIS P. HEBERT, INC. IS NOT RESPONSIBLE FOR ANY LOCATED DURING THE COURSE OF THE PROJECT.
NOTE: THIS DRAWING WAS PREPARED FOR PERMITTING PURPOSES ONLY, AND IS NOT A PROPERTY BOUNDARY SURVEY AND AS SUCH DOES NOT COMPLY WITH THE "MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS" AS ADOPTED BY THE TEXAS PROFESSIONAL ENGINEERING AND LAND SURVEYING BOARD.
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Feet
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Morris P. Hebert, Inc.
client focused solutions
SURVEYING • ENGINEERING • ENVIRONMENTAL SERVICES • FIELD SERVICES • GIS
283 CORPORATE DRIVE • P.O. BOX 3106 • HOUMA, LOUISIANA 70361 • (985) 879-2731
10101 SOUTHWEST FREEWAY • SUITE 620 • HOUSTON, TEXAS 77071 • (713) 219-1470
EMERALD BIOFUELS, LLC
PROPOSED INTEGRATED BIOFUEL PRODUCTION ENTERPRISE FACILITY
WETLAND DELINEATION MAP
DRAWN BY: JLC
SHEET: WETDELC
CHECKED BY: CRF
SCALE: 1 IN = 200 FT
APPROVED BY:
DATE: 3/19/2014
REVISION BY:
JOB NO.: 11710
MAP FILE: 11710_WETDELC.mxd

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUL 25 2014

MEMORANDUM FOR: DR. EDMOND J. RUSSO, JR.
DEPUTY DISTRICT ENGINEER,
PROGRAMS AND PROJECT MANAGEMENT
USACE GALVESTON DISTRICT
PO BOX 1229
GALVESTON TX 77553-1229

FROM: AFRL/RXME (J. NEELY)
2977 HOBSON WAY, RM 215
WRIGHT-PATTERSON AFB, OH 45433-7734

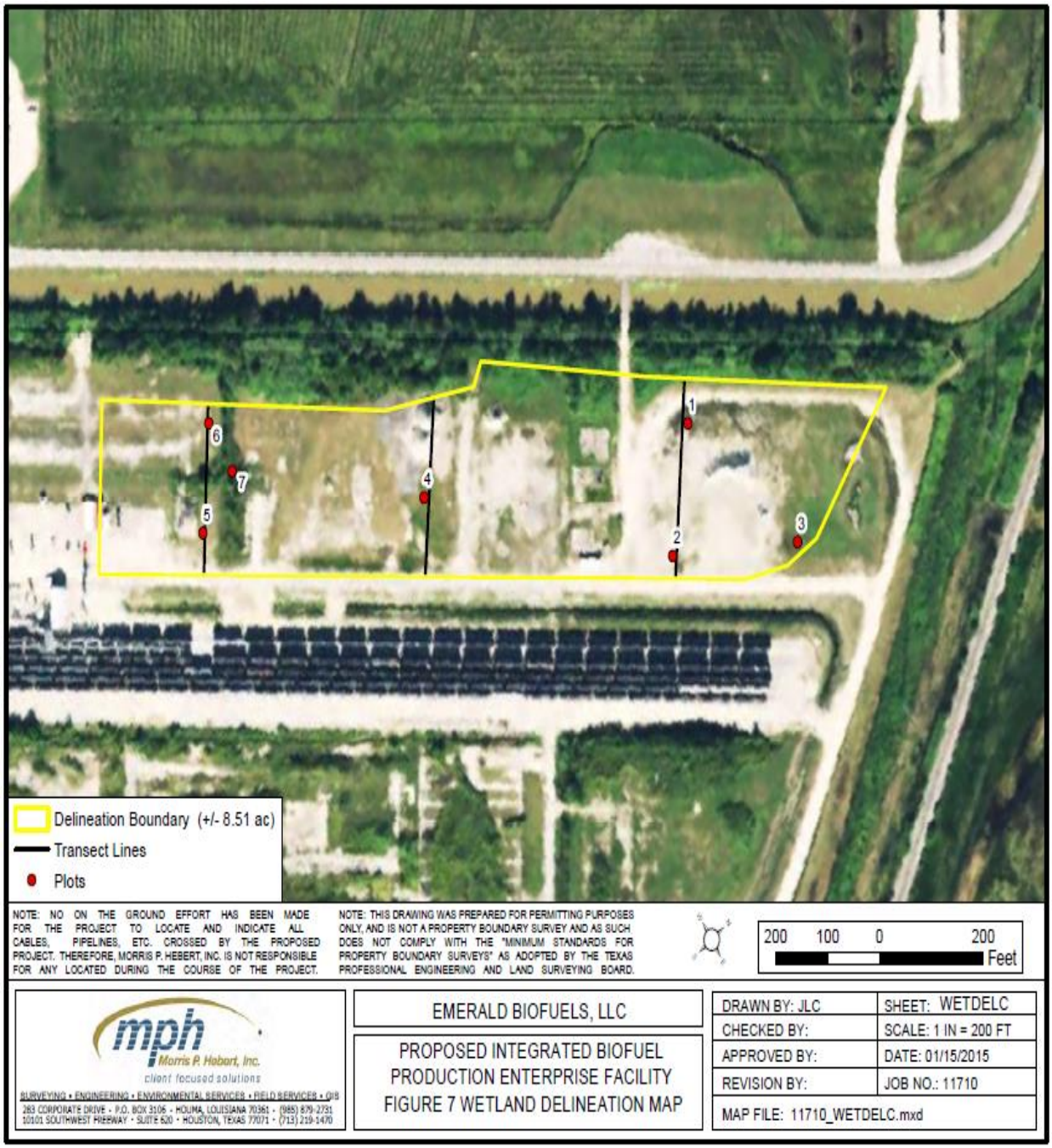
SUBJECT: Jurisdictional Determination Application SWG 2014-00312

1. We respectfully request the status and estimated completion date for the aforementioned subject application. This application is the result of a joint Office of the Secretary of Defense, and Departments of Navy, Agriculture and Energy effort to develop a biomass-based feedstock derived diesel and/or jet fuel production facility capability. This effort has significant Presidential (Presidential Determination, dated 8 Jan 2013) and Congressional interest. This review is one of the final actions required to finalize its National Environmental Policy Act regulatory requirements. Your prompt attention to this application is appreciated.

2. Air Force Research Laboratory's Title III Project Officer is Mr. John Crabill. He can be contacted at (937) 904-4390, or at john.crabill@us.af.mil. Our environmental affairs coordinator is Mr. Warren Assink and he can be contacted at (937) 255-3480 or at warren.assink@us.af.mil.

James A. Neely

JAMES A. NEELY, Deputy Program Manager
Defense Production Act (DPA) Title III
Materials and Manufacturing Directorate
Air Force Research Laboratory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Delineation Boundary (+/- 8.51 ac)
Transect Lines
Plots
NOTE: NO ON THE GROUND EFFORT HAS BEEN MADE FOR THE PROJECT TO LOCATE AND INDICATE ALL CABLES, PIPELINES, ETC. CROSSED BY THE PROPOSED PROJECT. THEREFORE, MORRIS P. HEBERT, INC. IS NOT RESPONSIBLE FOR ANY LOCATED DURING THE COURSE OF THE PROJECT.
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Morris P. Hebert, Inc.
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SURVEYING • ENGINEERING • ENVIRONMENTAL SERVICES • FIELD SERVICES • GIS
283 CORPORATE DRIVE • P.O. BOX 3106 • HOUMA, LOUISIANA 70361 • (985) 879-2731
10101 SOUTHWEST FREEWAY • SUITE 620 • HOUSTON, TEXAS 77071 • (713) 219-1470
EMERALD BIOFUELS, LLC
PROPOSED INTEGRATED BIOFUEL PRODUCTION ENTERPRISE FACILITY
FIGURE 7 WETLAND DELINEATION MAP
DRAWN BY: JLC
SHEET: WETDELC
CHECKED BY:
SCALE: 1 IN = 200 FT
APPROVED BY:
DATE: 01/15/2015
REVISION BY:
JOB NO.: 11710
MAP FILE: 11710_WETDELC.mxd

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229

January 29, 2015

REPLY TO
ATTENTION OF:

Compliance Branch

SUBJECT: **SWG-2015-00056**, Emerald Biofuels LLC, Jurisdictional Determination, Approximate 8.5-Acre Tract, Port Arthur, Jefferson County, Texas

Ms. Marie Taylor
Morris P. Herbert, Inc.
283 Corporate Drive
Houma, Louisiana 70360

Dear Ms. Taylor:

This letter is in response to the January 19, 2015 request for a jurisdictional determination on behalf of Emerald Biofuels LLC for a proposed integrated biofuels production facility. The approximate 8.5-acre project site is located within the GT OmniPort Facility, approximately 1 mile southeast of the intersection Lakeside Plaza and State Highway 73, in Port Arthur, Jefferson County, Texas (map attached).

Based on a review of available information, we have determined that the project site does not contain waters of the United States, including adjacent wetlands, subject to Section 404 of the Clean Water Act (CWA) or Section 10 of the Rivers and Harbors Act. **As such, a Department of the Army permit will not be required to conduct work, place structures, and/or discharge dredged and/or fill material onto the project site.**

This determination has been conducted to identify the limits of the United States Army Corps of Engineers (USACE) CWA jurisdiction for the particular site identified in this request. However this determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

This letter constitutes an approved jurisdictional determination for your subject site, and is valid for five years from the date of this letter unless new information warrants a revision prior to the expiration date. If you object to this determination, you may request an administrative appeal under USACE regulations at 33 CFR Part 331. You will find an enclosed Notification of Appeals Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination, you must submit a completed RFA form to the Southwest Division Office at the following address:

-2-

Mr. Elliott Carman
Regulatory Appeals Review Officer
Southwestern Division USACE (CESWD-PD-O)
1100 Commerce Street, Suite 831
Dallas, Texas 75242-1731
Phone: 469-487-7061
Fax: 469-487-7199

In order for an RFA to be accepted by USACE, USACE must determine it is complete, meets the criteria for appeal under 33 CFR Part 331.5, and has been received by the Division Office within 60 days of the date of the NAP. It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter.

If you have questions concerning this matter, please reference file number **SWG-2015-00056** and contact me at the letterhead address, or by calling 409-766-3991. To assist us in improving our service to you, please complete the survey found at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0. If you would prefer a hard copy of the survey form, please let us know, and one will be mailed to you.

Sincerely,

Kristin Shivers
Project Manager
Compliance Branch

Enclosures

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: **EMERALD BIOFUELS, LLC**	**SWG 2015-00056**	Date: **01/29/2015**
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of Permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg/ or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved jurisdictional determination (JD) or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact:
Ms. Kristin Shivers Project Manager, Compliance Branch CESWG-RD-C U.S. Army Corps of Engineers P.O. Box 1229 Galveston, Texas 77553-1229 409-766-3991; FAX: 409-766-3931	Mr. Elliott Carman Regulatory Appeal Review Officer Southwestern Division USACE (CESWD-PD-O) 1100 Commerce Street, Suite 831 Dallas, Texas 75242-1731 469-487-7061, FAX: 469-487-7199

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or authorized agent.		


2012 Natural Color
Port Arthur North and South,Texas Quadrangles
SWG-2015-00056
Emerald Biofuels LLC
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1,000
2,000 Feet
USACE SWG-PE-RC/KS/Created: 29 January 2015
Legend
Approximate Project Boundary

APPENDIX C

U.S. FISH AND WILDLIFE SERVICE – THREATENED AND ENDANGERED SPECIES

MEMO FOR THE RECORD

8 May 2015

AFRL contacted Mr. David Hoth of the US Fish and Wildlife Service Eastern Coastal Service Office at Houston Tx and discussed the March 2013 correspondence for the proposed site. It was confirmed the letter is primarily design recommendations to reduce potential impacts at low risk sites. There is no need to update the letter as the site analysis has not changed from the previous correspondence.

Warren Assink
AFRL/RX

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Division of Ecological Services
17629 El Camino Real, Suite 211
Houston, Texas 77058
281/286-8282 / (FAX) 281/488-5882

In Reply Refer To:
FWS/R2/CLES/

March 2013

Thank you for your request for threatened and endangered species, fish and wildlife, environmental, and/or aquatic resources information, comments, and/or recommendations within the United States Fish and Wildlife Service (Service) Clear Lake Ecological Service's area of responsibility. Our comments are provided in accordance with the provisions of the Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.), the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.), the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 et seq.), the Fish and Wildlife Coordination Act (16 U.S.C. 661-667(e)), and the National Environmental Policy Act (42 U.S.C. §4321-4347 et seq.).

Endangered Species Act

The ESA and Federal regulations prohibit "take" of threatened or endangered species of fish and wildlife within the U.S. or its territorial waters. Please note that "take" is defined to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." A county-by-county listing of federally listed threatened and endangered species that occur within this office's work area can be found at http://www.fws.gov/southwest /es/ ES_Lists_Main.cfm.

Section 7 of the ESA
According to Section 7(a)(2) of the ESA, it is the responsibility of each Federal agency to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any federally listed species. As such, Federal agencies are required to consult with the Service if it appears that any action they are proposing "may affect" a listed species.

To evaluate a project for its potential effect(s) to listed species, project proponents should use the county-by-county listing and other current species information[1] to determine whether habitat for a listed species is present at the project site. If potential habitat is present, a qualified individual should conduct surveys to determine whether a listed species is present. After completing a habitat evaluation and/or any necessary surveys, project proponents should evaluate the project for potential effects[2] to listed species and make one of the following determinations:

No effect – the proposed action will not affect federally listed species or critical habitat (i.e., suitable habitat for the species occurring in the project county is not present in or adjacent to the action area). No coordination or contact with the Service is necessary. However, if the project changes or

[1] For information regarding habitat requirements of federally listed species please visit http://ecos.fws.gov/.
[2] The effects of any action under Section 7 should be analyzed together with the effects of other activities that are interrelated to, or interdependent with, that action. Therefore, if your proposed action(s) is part of and depends on a separate action for its justification, or has no independent utility apart from the separate action, then it should be considered interrelated or interdependent and should be analyzed under Section 7 of the ESA.

additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Is not likely to adversely affect – the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable (extremely unlikely to occur), insignificant (can't be measured or detected), or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effect. You should seek written concurrence from the Service that adverse effects have been eliminated. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.

Is likely to adversely affect – adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also is likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal Section 7 consultation with the Service.

Regardless of the determination, the Service recommends developing a complete record of the evaluation, including steps leading to the determination of effect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related articles.

Please be advised that while a Federal agency may designate a non-Federal representative to conduct informal consultations with the Service, assess project effects, or prepare a biological assessment, the Federal agency must notify the Service in writing of such a designation. The Federal agency shall also independently review and evaluate the scope and contents of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

The Service's Consultation Handbook is available online to assist you with further information on definitions, process, and fulfilling ESA requirements for your projects at http://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf.

Section 10 of the ESA
Projects that do not involve a federal nexus can be evaluated under Section 10 of the ESA. If "incidental take" of a listed species is likely to occur during a proposed non-federal activity, then the project sponsor or landowner may apply for an incidental take permit under Section 10 of the ESA. Please see the following links for further guidance on Section 10 http://www.fws.gov/endangered/permits/index.html and http://www.fws.gov/southwest/es/AustinTexas/ESA_HCP_FAQs.html.

Candidate Species

Freshwater Mussels
The following species of mussels occur in Texas and are candidates for listing under the ESA: Texas fatmucket *Lampsiilis bracteata*, golden orb *Quadrula aurea*, smooth pimpleback *Quadrula houstonensis*, Texas pimpleback *Quadrula petrina*, and Texas fawnsfoot *Truncilla macrodon*. We are also reviewing the status of six other species for potential listing under the ESA. One of the main contributors to mussel die offs is sedimentation, which smothers and suffocates mussels. To reduce sedimentation within rivers, streams, and tributaries crossed by a project, the Service recommends

that that you implement the best management practices within the enclosed document entitled *Best Management Practices for Projects Affecting, Rivers, Streams and Tributaries.*

Candidate Conservation Agreements
Candidate Conservation Agreements (CCAs) or Candidate Conservation Agreements with Assurances (CCAAs) are voluntary agreements between the Service and public or private entities to implement conservation measures to address threats to candidate species. Implementing conservation efforts before species are listed increases the likelihood that simpler, flexible, and more cost-effective conservation options are available. A CCAA can provide participants with assurances that if they engage in conservation actions, they will not be required to implement additional conservation measures beyond those in the agreement. For additional information on CCAs/CCAAs please visit the Service's website at http://www.fws.gov/endangered/what-we-do/cca.html.

Migratory Birds

The MBTA protects all native migratory birds and prohibits the taking, killing, possession, and transportation (among other actions) of migratory birds, their eggs, and parts, except when specifically permitted by regulations for specific intentional uses. A list of birds protected under the MBTA can be found in 50 CFR 10 of the MBTA and at http://www.fws.gov/migratorybirds/RegulationsPolicies/mbta/mbtandx.html. Activities that have the potential to take migratory birds as well as recommendations for reducing such take include:

Utility Lines
The construction of overhead power lines creates threats of avian collision and electrocution. The Service recommends the installation of underground rather than overhead power lines whenever possible. For new lines and/or the modification, maintenance, and update of old lines, we recommend that you implement the Avian Protection Plan guidelines for power lines found at http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/BirdHazards.html.

Communication Towers
Telecommunication towers are estimated to kill millions of birds per year. We recommend that you implement the guidance in *Service Guidance on Siting, Construction, Operation, and Decommissioning of Communication Towers*. This guidance can be found at http://www.fws.gov/habitatconservation/communicationtowers.html.

We request that you provide us with the final location and specifications of your proposed towers, as well as the recommendations implemented. A Tower Site Evaluation Form is also available via the above website; we recommend you complete this form and keep it in your files.

Land Clearing
Land clearing work can destroy active nests (eggs or young present) and kill birds. The Service recommends you review and implement the conservation actions for migratory birds outlined in the enclosed document entitled *Suggested Priority for Migratory Bird Conservation Actions for Projects.*

Colonial Water Bird Rookeries

Disturbance from construction activities and project operations can adversely affect breeding bird use of nesting sites and can result in nest abandonment and loss of reproduction. We recommend that

project activities do not occur within 1,000 feet of colonial waterbird rookeries during the nesting season from February 15 to September 1.

Bald Eagles

The bald eagle *Haliaeetus leucocephalus* is protected by the BGEPA and the MBTA. Accordingly, the Service recommends that project proponents use the *National Bald Eagle Management Guidelines* to avoid and minimize harm and disturbance of bald eagles. These guidelines can be found at http://www.fws.gov/migratorybirds/BaldAndGoldenEagleManagement.htm. Eagles are particularly vulnerable to disturbance throughout the nesting season, which in Texas is generally from October 1 to May 30.

Wetlands, Streams, and Other Aquatic Resources

Numerous projects along the Texas coast often impact wetlands, streams, or other aquatic resources or require work in a navigable waterway. Section 404 of the Clean Water Act regulates the discharge of fill material into waters of the U.S. (e.g., wetlands and streams) and Section 10 of the Rivers and Harbors Act of 1899 regulates work and/or structures within navigable waterways. The U.S. Army Corps of Engineers (Corps) is tasked with administering these regulations and we recommend that you coordinate your activities with the Corps for proper permitting and compliance with these regulations.

Thank you for the opportunity to provide comments on your project. If you need any additional information, you can contact one of our biologists (Donna Anderson, Moni Belton, Kelsey Gocke, Jeff Hill, Charrish Stevens, or Arturo Vale) at 281/286-8282.

Sincerely,

Edith Erfling

Edith Erfling
Field Supervisor

Enclosures

Suggested Priority of Migratory Bird Conservation Actions for Projects
U.S. Fish and Wildlife Service (USFWS), Migratory Bird Management

March 9, 2010

1. Avoid any take of migratory birds and/or minimize the loss, destruction, or degradation of migratory bird habitat while completing the proposed project or action.

2. Determine if the proposed project or action will involve below- and/or above-ground construction activities since recommended practices and timing of surveys and clearances could differ accordingly.

3. If the proposed project or action includes a reasonable likelihood that take of migratory birds will occur, then complete actions that could take migratory birds outside of their nesting season. This includes clearing or cutting of vegetation, grubbing, etc. The primary nesting season for migratory birds varies greatly between species and geographic location, but generally extends from early April to mid-July. However, the maximum time period for the migratory bird nesting season can extend from early February through late August. Also, eagles may initiate nesting as early as late December or January depending on the geographic area. Due to this variability, project proponents should consult with the appropriate Regional Migratory Bird Program (USFWS) for specific nesting seasons. Strive to complete all disruptive activities outside the peak of migratory bird nesting season to the greatest extent possible. Always avoid any habitat alteration, removal, or destruction during the primary nesting season for migratory birds. Additionally, clearing of vegetation in the year prior to construction (but not within the nesting season) may discourage birds from attempting to nest in the proposed construction area, thereby decreasing chance of take during construction activities.

4. If a proposed project or action includes the potential for take of migratory birds and/or the loss or degradation of migratory bird habitat and work cannot occur outside the migratory bird nesting season (either the primary or maximum nesting season), project proponents will need to provide the USFWS with an explanation for why work has to occur during the migratory bird nesting season. Further, in these cases, project proponents also need to demonstrate that all efforts to complete work outside the migratory bird nesting season were attempted, and that the reasons work needs to be completed during the nesting season were beyond the proponent's control.

   Also, where project work cannot occur outside the migratory bird nesting season, project proponents must survey those portions of the project area during the nesting season prior to construction occurring to determine if migratory birds are present and nesting in those areas. In addition to conducting surveys during the

nesting season/construction phase, companies may also benefit from conducting surveys during the prior nesting season Such surveys will assist the company in any decisions about the likely presence of nesting migratory birds or sensitive species in the proposed project or work area. While individual migratory birds will not necessarily return to nest at the exact site as in previous years, a survey in the nesting season in the year before construction allows the company to become familiar with species and numbers present in the project area well before the nesting season in the year of construction. Bird surveys should be completed during the nesting season in the best biological timeframe for detecting the presence of nesting migratory birds, using accepted bird survey protocols. USFWS Offices can be contacted for recommendations on appropriate survey guidance. Project proponents should also be aware that results of migratory bird surveys are subject to spatial and temporal variability. Finally, project proponents will need to conduct migratory bird surveys during the actual year of construction, if they cannot avoid work during the primary nesting season (see above) and if construction will impact habitats suitable for supporting nesting birds.

5. If no migratory birds are found nesting in proposed project or action areas immediately prior to the time when construction and associated activities are to occur, then the project activity may proceed as planned.

6. If migratory birds are present and nesting in the proposed project or action area, contact your nearest USFWS Ecological Services Field Office and USFWS Region Migratory Birds Program for guidance as to appropriate next steps to take to minimize impacts to migratory birds associated with the proposed project or action.

* Note: these proposed conservation measures assume that there are no Endangered or Threatened migratory bird species present in the project/action area, or any other Endangered or Threatened animal or plant species present in this area. If Endangered or Threatened species are present, or they could potentially be present, and the project/action may affect these species, then consult with your nearest USFWS Ecological Services Office before proceeding with any project/action.

** The Migratory Bird Treaty Act prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. While the Act has no provision for allowing unauthorized take, the USFWS realizes that some birds may be killed during construction and operation of energy infrastructure, even if all known reasonable and effective measures to protect birds are used. The USFWS Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to avoid take of migratory birds, and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve

individuals, companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without identifying and implementing all reasonable, prudent and effective measures to avoid that take. Companies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures prior to/during construction or similar activities.

*** Also note that Bald and Golden Eagles receive additional protection under the Bald and Golden Eagle Protection Act (BGEPA). BGEPA prohibits the take, possession, sale, purchase, barter, offer to sell, purchase, or barter, transport, export or import, of any Bald or Golden Eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. Further, activities that would disturb Bald or Golden Eagles are prohibited under BGEPA. "Disturb" means to agitate or bother a Bald or Golden Eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an Eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. If a proposed project or action would occur in areas where nesting, feeding, or roosting eagles occur, then project proponents may need to take additional conservation measures to achieve compliance with BGEPA. New regulations (50 CFR § 22.26 and § 22.27) allow the take of bald and golden eagles and their nests, respectively, to protect interests in a particular locality. However, consultation with the Migratory Bird, Ecological Services, and Law Enforcement programs of the Service will be required before a permit may be issued.

BEST MANAGEMENT PRACTICES FOR PROJECTS AFFECTING RIVERS, STREAMS AND TRIBUTARIES

The project crosses or potentially affects river, stream or tributary aquatic habitat. Therefore the Service recommends implementing the following applicable Best Management Practices:

1. Construct stream crossings during a period of low streamflow (e.g., July - September);
2. Cross streams, stream banks and riparian zones at right angles and at gentle slopes;
3. When feasible, directionally bore under stream channels;
4. Disturb riparian and floodplain vegetation only when necessary;
5. Construction equipment should cross the stream at one confined location over an existing bridge, equipment pads, clean temporary native rock fill, or over a temporary portable bridge;
6. Limit in-stream equipment use to that needed to construct crossings;
7. Place trench spoil at least 25 feet away landward from streambanks;
8. Use sediment filter devices to prevent movement of spoil off right-of-way when standing or flowing water is present;
9. Trench de-watering, as necessary, should be conducted to prevent discharge of silt laden water into the stream channel;
10. Maintain the current contours of the bank and channel bottom;
11. Do not store hazardous materials, chemicals, fuels, lubricating oils, and other such substances within 100 feet of streambanks;
12. Refuel construction equipment at least 100 feet from streambanks;
13. Revegetate all disturbed areas as soon as possible after construction to prevent unnecessary soil erosion. Use only native riparian plants to help prevent the spread of exotics;
14. Maintain sediment filters at the base of all slopes located adjacent to the streams until right-of-way vegetation becomes established;
15. Maintain a vegetative filtration strip adjacent to streams and wetlands. The width of a filter strip is based on the slope of the banks and the width of the stream. Guidance to determine the appropriate filter strip (stream management zone, SMZ) width is provided below; and
16. Direct water runoff into vegetated areas.

BEST MANAGEMENT PRACTICES FOR PROJECTS AFFECTINGRIVERS, STREAMS AND TRIBUTARIES. Document prepared by the U.S. Fish and Wildlife Service, Oklahoma Ecological Services Field Office, 9014 East 21st Street, Tulsa, Oklahoma 74129-1428. For the most recent information visit our website, http://www.fws.gov/southwest/es/oklahoma/default.htm, write, or call (918) 581-7458. 1/24/2007

2

SMZ widths should consider watershed characteristics, risk of erosion, soil type, and stream width. SMZ widths are measured from the top of each bank and established on each side of the stream. Erosion risk is increased with sandy soil, steep slopes, large watersheds and increasing stream widths. Recommended primary and secondary SMZ widths are provided in the table below.

Stream Width (Feet)	Slope (Percent)	Primary SMZ (Feet)	Secondary SMZ (Feet)
<20	<7	35	0
<20	7-20	35	50
<20	>20	Top of slope or 150	75
20-50	<7	50	0
20-50	7-20	50	50
20-50	>20	Top of slope or 150	75
>50	<7	Width of stream or 100 max.	0
>50	7-20	Width of stream or 100 max.	50
>50	>20	Top of slope or 150	75

Reference

Arkansas Forestry Commission. 2001. Draft Arkansas Forestry Best Management Practices for Water Quality Protection.

APPENDIX D

TEXAS PARKS AND WILDLIFE DEPARTMENT – THREATENED AND ENDANGERED SPECIES

MEMORANDUM FOR THE RECORD

Dated: 17 April 2015

AFRL contacted Dr. Brent Ortego, Avian Subject Matter Expert at the Texas Parks and Wildlife Department concerning known Eagles and Colonial birds nesting in and around the proposed action area. There is minimal data concerning the privately owned site, but confirmed records of Cormorant nesting pairs opposite the Taylor bayou shore in the early 1990s. Due to continued and increasing industrialization and transportation traffic in the area there remains a potential for continued rookery use, but there is minimal bird impacts expected from the proposed action.

Warren Assink
AFRL/RX

From: Joshua Curry
To: Marie Taylor
Subject: FW: TXNDD Data Request
Date: Friday, December 12, 2014 8:24:07 AM
Attachments: cass_20141107.zip

From: Texas Natural Diversity Database [mailto:TexasNatural.DiversityDatabase@tpwd.texas.gov]
Sent: Monday, November 24, 2014 4:24 PM
To: Joshua Curry
Subject: RE: TXNDD Data Request

Dear Mr. Curry,

Please find below the response to Ms. Cass sent last week.

Your information request area contains known ecologically significant stream segments. Use the link below to obtain those data.

The Texas Natural Diversity Database (**TXNDD**) includes federal and state listed and tracked Threatened, Endangered, and Rare species. The attached .zip file contains documents that will guide you in appropriate use, restrictions, and shapefile interpretation of Texas NDD data as well as a request for adding data to the TXNDD. Also included is a shapefile of the Threatened, Endangered and Rare species element occurrences made from information the TXNDD has available presently both within and touching the requested quads along with a companion EO **report**. Areas where EO data are absent **do not mean** absence of occurrence for Threatened, Endangered, and Rare species. Included is an **EO List** of the Threatened, Endangered and Rare species element occurrences that are on the quads adjacent to your request area. The **EO List** is to inform you of other potential federal and state listed and tracked Threatened, Endangered, and Rare species within the area. To round out your review, please use the Rare, Threatened, and Endangered Species of Texas by County application found here. For questions regarding the application, please contact Amy Turner at Amy.Turner@tpwd.texas.gov or by calling her directly at (361) 576-0022 x223.

- If your project area is in **Travis, Williamson, or Bexar county**, it is highly recommended that you download the GIS shapefiles for the Karst Zones from the USFWS website (http://www.fws.gov/southwest/es/austintexas/) and/or contact Jenny Wilson (USFWS) at (512) 490-0057 x231 for a review of the project location. All three counties are known to have multiple important karst features.
- If your information request includes one or more records for **Bald Eagle** or **colonial waterbirds**, contact Brent Ortego at brent.ortego@tpwd.state.tx.us or (361) 576-0022 for more up-to-date information on the these taxa.
- **For communication towers**: In addition to the USFWS guidelines in the attachment and the links at towerkill.com, there is research identifying a simple way to reduce bird strike and high bird mortality at towers. Refer to the following article for more information: Gehring J., P. Kerlinger, A.M. Manville II. (2009) Communication towers, lights, and birds: successful

methods of reducing the frequency of avian collisions. Ecological Applications: Vol. 19, No. 2, pp. 505-514. (doi: 10.1890/07-1708.1)

- For **wind energy or transmission related projects**: To obtain the Department's guidelines, it is recommended to contact Julie Wicker at julie.wicker@tpwd.state.tx.us or (512) 389-4579. In addition, the U.S. Fish and Wildlife Service's Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines and other helpful links and information can be accessed at the following website: http://www.fws.gov/habitatconservation/wind.html.
- If your information request contains records for **Texas trailing phlox**, you should contact Jason Singhurst at jason.singhurst@tpwd.state.tx.us or (512) 389-8726.

Absence of information in an area does not mean absence of occurrence. *Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Data from the TXNDD do not provide a definitive statement as to the presence, absence, or condition of special species, natural communities, or other significant features within your project area. These data cannot substitute for an on-site evaluation by qualified biologists.*

Additional sources of data:
TPWD Annotated County Lists:
http://www.tpwd.state.tx.us/landwater/land/maps/gis/ris/endangered_species/
USFWS species lists: http://ecos.fws.gov/tess_public/servlet/gov.doi.tess_public.servlets.EntryPage
USFWS CRITICAL HABITAT: http://criticalhabitat.fws.gov/
Ecologically Significant Stream Segments:
http://www.tpwd.state.tx.us/landwater/land/maps/gis/data_downloads/
Ecologically Significant Stream Segment Information:
http://www.tpwd.state.tx.us/landwater/water/environconcerns/water_quality/sigsegs/

Thank-you,

Laura Dugan, Ph.D.
Texas Natural Diversity Database Database Manager
Texas Parks and Wildlife Department – Wildlife Division
Office: (512) 389-8731
Email: laura.dugan@tpwd.texas.gov

From: Joshua Curry [mailto:jcurry@mphinc.com]
Sent: Monday, November 17, 2014 12:33 PM
To: Texas Natural Diversity Database
Subject: TXNDD Data Request

This is a follow-up email regarding an earlier TXNDD request in which my co-worker Shannon Cass

submitted last week for the attached EA boundary. Could you please forward all response emails to myself as Shannon will be on extended leave. Thanks for your cooperation.

Joshua L. Curry
Environmental Scientist,
Environmental and Regulatory Services | Morris P. Hebert, Inc.
Direct Line 985-860-2693
10343 Siegen Lane Baton Rouge, LA 70810
Baton Rouge 225.766.5240 | Facsimile 225.766.5866
Houma 985.879.2731
www.mphinc.com | jcurry@mphinc.com

Disclaimer: The information contained in this message is for the intended addressee only and may contain confidential and/or privileged information. If you are not the intended addressee, please delete this message and notify the sender; do not copy or distribute this message or disclose its contents to anyone. Any views or opinions expressed in this message are those of the author and do not necessarily represent those of Morris P. Hebert, Inc. or of any of its associated companies. No reliance may be placed on this message without written confirmation from an authorized representative of the company.

TEXAS PARKS & WILDLIFE

Life's better outside.®

May 19, 2014

Ms. Marie Taylor
Morris P. Hebert, Inc.
One Sterling Plaza
10101 Southwest Freeway, Suite 620
Houston, TX 77074

RE: Emerald Biofuels, LLC
Proposed Integrated Biofuel Production Enterprise Facility
Port Arthur, Jefferson County, Texas

Dear Ms. Taylor:

Texas Parks and Wildlife Department (TPWD) received the preliminary information request regarding the Integrated Biofuel Production Enterprise Facility (IBPE) in Port Arthur, Texas. Thank you for the opportunity to review the threatened and endangered species assessment (Assessment) for this project. TPWD staff has reviewed the information provided and offers the following comments and recommendations.

Under section 12.0011 of the Texas Parks and Wildlife Code, TPWD is charged with "providing recommendations that will protect fish and wildlife resources to local, state, and federal agencies that approve, permit, license, or construct developmental projects" and "providing information on fish and wildlife resources to any local, state, and federal agencies or private organizations that make decisions affecting those resources."

Project Description

The proposed IBPE would be an industrial facility capable of biofuel production and would be constructed by Emerald Biofuels, LLC (Emerald). The project site is surrounded by fields and industrial areas, and waterways in the vicinity of the project include Tiger Bayou, Taylor Bayou, and Gulf Canal.

Biofuel Source

The Assessment did not provide details regarding the source of the biofuels that would be produced by the IBPE facility. Exotic, invasive species can compete with or otherwise negatively impact native fish and wildlife species that TPWD is charged with conserving. TPWD regulates the handling of non-native fish, shellfish, and aquatic plants. Some species are prohibited but their use may be authorized under an appropriate TPWD permit. If Emerald intends to use algae as

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.texas.gov

a biofuel source, TPWD staff advise that release of non-native or genetically modified algae into the environment has the potential to harm fishery production, recreation and tourism.

Recommendation: In order to adequately review the impacts of the proposed IBPE facility, TPWD recommends Emerald provide additional information on which species would be cultured to produce biofuel at the facility. If culture of microalgae is planned, TPWD recommends the Texas Department of Agriculture be consulted.

Water Quality

Flooding, spills, and other events would be more likely to cause movement of species out of the IBPE facility and into the environment if the culture area is not enclosed. In addition, depending on the nature and volume of the discharge, wastewater could have an impact on native species and habitats in the area. Wastewater discharge could also serve an avenue for species to spread from the culture facility into the environment.

Recommendation: TPWD recommends Emerald provide additional information related to whether the IBPE facility would be enclosed or in the open. TPWD staff also requests information regarding any kind of wastewater discharge that is planned for the facility. TPWD recommends that Emerald consult with the Texas Commission on Environmental Quality regarding authorization and requirements for any wastewater discharge that is planned for the facility.

Artificial Lighting

The project does not indicate the type and amount of lighting that would be required for the project location. Artificial lighting can have several general effects on wildlife such as attracting them to areas making them vulnerable to predators, repelling them from areas (a form of habitat loss); or altering their diurnal cycles or patterns. Although the majority of the project is located in an area of commercial developments that already contain artificial lighting, cumulative impacts associated with artificial lighting can be avoided or minimized by using appropriate lighting fixtures and bulbs.

Recommendation: TPWD recommends mounting shielded light fixtures as low as possible to direct light downward and reduce the amount of glare and

light visible to animals in the area. Also, using bulbs with long wavelengths (e.g., amber) that is the lowest possible lighting level consistent with human safety further reduces potential negative impacts to wildlife. Light emitted at 589 nanometers has been determined to provide effective vision for humans while minimizing the amount of interference with some nocturnal animals.

Parks and Wildlife Code and Texas Natural Diversity Database Data

Texas has listed additional animal species not protected by the Endangered Species Act as "State-Threatened" (ST). Any take (incidental or otherwise) of ST animals is prohibited. However, state law only protects the species, and not its habitat. The ST species may only be handled/relocated by permitted individuals authorized by TPWD. There are penalties and restitution values associated with unauthorized take of state-listed species.

Determining the actual presence of a species in a given area depends on many variables including daily and seasonal activity cycles, environmental activity cues, preferred habitat, transiency and population density (both wildlife and human). The absence of a species can be demonstrated only with great difficulty and then only with repeated negative observations, taking into account all the variable factors contributing to the lack of detectable presence.

The Texas Natural Diversity Database (TXNDD) is intended to assist users in avoiding harm to rare species or significant ecological features. Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Absence of information in the database does not imply that a species is absent from that area. Although it is based on the best data available to TPWD regarding rare species, the data from the TXNDD do not provide a definitive statement as to the presence, absence or condition of special species, natural communities, or other significant features within your project area. These data are not inclusive and **cannot be used as presence/absence data**. They represent species that could potentially be in your project area. This information cannot be substituted for on-the-ground surveys. The TXNDD is updated continuously based on new, updated and undigitized records; for questions regarding a record, please contact TexasNatural.DiversityDatabase@tpwd.texas.gov.

According to the TXNDD occurrences of Colonial Waterbird Rookeries have been recorded near the proposed project (within 0.5 to 5 miles).

Recommendation: If rare species or their habitat would be impacted by the proposed project, TPWD recommends the applicant coordinate with TPWD and the USFWS, as appropriate, to determine avoidance, minimization, and mitigation strategies. TPWD recommends construction crews be informed of the rare species that have potential to occur in the project county and avoid disturbance to sensitive species if encountered during construction. Only personnel with a TPWD scientific research permit are allowed to handle and move state-listed species. For further information on the required permit please contact Chris Maldonado at (512) 389-4647.

Comment: Further consultation with TPWD would be warranted upon detection of a Texas listed rare, threatened, or endangered species within or near the proposed project at any time prior to or during construction.

Recommendation: If active rookeries are discovered within or near the proposed project site, construction activities should be scheduled and implemented when the birds are not present, after nesting activities have ceased. TPWD recommends avoiding vegetation removal and other forms of disturbance near colonial waterbird rookeries.

Revegetation

Recommendation: TPWD recommends that Emerald reseed disturbed soils with a mixture of grasses and forbs native to Jefferson County. To enhance native grasses available to wildlife in the project area TPWD recommends that Bermuda grass be avoided to the extent possible in reseeding efforts, though TPWD understands that slopes may require certain grasses to control erosion. As an introduced species that can be extremely invasive, its use in federally funded projects may be inconsistent with Executive Order 13112 on Invasive Species.

For assistance in determining the best native seed mix for the project area, please contact our staff. Runoff control measures should be maintained until native plants have been reestablished on disturbed areas.

Ms. Marie Taylor
May 19, 2014
Page 5 of 5

TPWD appreciates Emerald's efforts to coordinate with us on the impacts to fish and wildlife resources and looks forward to continued cooperative efforts. Please contact me at (361) 576-0022 or amy.turner@tpwd.texas.gov if you have any questions or need additional assistance.

Sincerely,

Amy Turner

Amy Turner, Ph.D.
Wildlife Habitat Assessment Program
Wildlife Division

AJT:gg.ERCS-8848

APPENDIX E

TEXAS GENERAL LAND OFFICE – TEXAS COASTAL MANAGEMENT PROGRAM

TEXAS GENERAL LAND OFFICE
JERRY PATTERSON, COMMISSIONER

December 15, 2014

Marie Taylor
Morris P. Herbert Inc.
Environmental & Regulatory Services
283 Corporate Drive
Houma, LA 70360

Re: Emerald Biofuels LLC
Revised Location of Biofuels Production Facility
GT OmniPort Industrial Park Facility
Port Arthur, Jefferson County, Texas
CMP#: 15-1187-F5

Dear Ms. Taylor:

Based on information provided to the Texas Coastal Management Program on the above project, it has been determined that it will likely not have adverse impacts on coastal natural resource areas (CNRAs) in the coastal zone. However, siting and construction should avoid and minimize impacts to CNRAs. If a U. S. Army Corps of Engineers permit is required, it will be subject to consistency review under the Texas Coastal Management Program.

Please forward this letter to applicable parties. If you have any questions or concerns, please contact me at (512) 475-3624 or at federal.consistency@glo.texas.gov.

Sincerely,

Ray Newby, P.G.
Coastal Geologist
Texas General Land Office
Coastal Resources Program

Stephen F. Austin Building • 1700 North Congress Avenue • Austin, Texas 78701-1495
Post Office Box 12873 • Austin, Texas 78711-2873
512-463-5001 • 800-998-4GLO
www.glo.state.tx.us

CONSISTENCY WITH THE TEXAS COASTAL MANAGEMENT PROGRAM

THE APPLICANT SHOULD SIGN THIS STATEMENT AND RETURN WITH APPLICATION PACKET TO:

COASTAL PERMIT SERVICE CENTER
TAMU-GALVESTON
P.O. BOX 1675
GALVESTON, TX 77553-1675
FAX: (409) 741-4010

FOR USACE USE ONLY:

PERMIT #: _____

PROJECT MGR: _____

APPLICANT'S NAME AND ADDRESS (PLEASE PRINT):

Title: Mr. First: [redacted] Last: Fleming Suffix:

Mailing Address: Emerald Biofuels LLC [redacted]

City: [redacted] State: [redacted] Zip Code: [redacted]

Country: USA Email: tfleming@emeraldbiofuels.com

Home: Work: [redacted] Mobile: Fax:

The Texas Coastal Management Program (CMP) coordinates state, local, and federal programs for the management of Texas coastal resources. Activities within the CMP boundary must comply with the enforceable policies of the Texas Coastal Management Program and be conducted in a manner consistent with those policies. The boundary definition is contained in the CMP rules (31 TAC §503.1).

- To determine whether your proposed activity lies within the CMP boundary, please contact the Permit Service Center at permitting.assistance@glo.texas.gov

PROJECT DESCRIPTION:

Is the proposed activity at a waterfront site or within coastal, tidal, or navigable waters? ☐ Yes ☒ No

If Yes, name affected coastal, tidal, or navigable waters: _____

Is the proposed activity water dependent? ☐ Yes ☒ No (31 TAC §501.3(a)(14))

http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=31&pt=16&ch=501&rl=3

Please briefly describe the project and all possible effects on coastal resources:

The proposed project is the development and operation of an Integrated Biofuels Production Enterprise (IBPE) Facility . The proposed IBPE Facility is located on an approximate 8.52-acre site at the existing GT OmniPort Industrial Park Facility near the city of Port Arthur, Jefferson County, Texas. As designed the proposed IBPE Facility would not impact coastal, tidal, or navigable waters.

Indicate area of impact: 8.52 ☒ acres or ☐ square feet

ADDITIONAL PERMITS/ AUTHORIZATIONS REQUIRED:

☐ Coastal Easement - Date application submitted: N/A
☐ Coastal Lease - Date application submitted: N/A
☒ Stormwater Permit- Date application submitted: submittal to TCEQ pending
☐ Water Quality Certification - Date application submitted: N/A
☒ Other state/federal/local permits/authorizations required:

TCEQ - air permit; City of Port Arthur - potable water withdrawal permit, wastewater discharge permit; Lower Neches Valley Authority - industrial water withdrawal permit

The proposed activity must not adversely affect coastal natural resource areas (CNRAs).

PLEASE CHECK ALL COASTAL NATURAL RESOURCE AREAS THAT MAY BE AFFECTED:

- ☐ Coastal Barriers
- ☐ Coastal Historic Areas
- ☐ Coastal Preserves
- ☐ Coastal Shore Areas
- ☐ Coastal Wetlands
- ☐ Critical Dune Areas
- ☐ Critical Erosion Areas
- ☐ Gulf Beaches
- ☐ Hard Substrate Reefs
- ☐ Oyster Reefs
- ☐ Special Hazard Areas
- ☐ Submerged Lands
- ☐ Submerged Aquatic Vegetation
- ☐ Tidal Sand or Mud Flats
- ☐ Waters of Gulf of Mexico
- ☐ Waters Under Tidal Influence

The applicant affirms that the proposed activity, its associated facilities, and their probable effects comply with the relevant enforceable policies of the CMP, and that the proposed activity will be conducted in a manner consistent with such policies.

PLEASE CHECK ALL APPLICABLE ENFORCEABLE POLICIES:

http://info.sos.state.tx.us/pls/pub/readtac$ext.ViewTAC?tac_view=5&ti=31&pt=16&ch=501&sch=B&rl=Y

	§501.15 Policy for Major Actions
	§501.16 Policies for Construction of Electric Generating and Transmission Facilities
	§501.17 Policies for Construction, Operation, and Maintenance of Oil and Gas Exploration and Production Facilities
	§501.18 Policies for Discharges of Wastewater and Disposal of Waste from Oil and Gas Exploration and Production Activities
	§501.19 Policies for Construction and Operation of Solid Waste Treatment, Storage, and Disposal Facilities
	§501.20 Policies for Prevention, Response and Remediation of Oil Spills
	§501.21 Policies for Discharge of Municipal and Industrial Wastewater to Coastal Waters
	§501.22 Policies for Nonpoint Source (NPS) Water Pollution
	§501.23 Policies for Development in Critical Areas
	§501.24 Policies for Construction of Waterfront Facilities and Other Structures on Submerged Lands
	§501.25 Policies for Dredging and Dredged Material Disposal and Placement
	§501.26 Policies for Construction in the DBeach/Dune System
	§501.27 Policies for Development in Coastal Hazard Areas
	§501.28 Policies for Develpment Within Coastal Barrier Reource System Units and Otherwise Protected Areas on Coastal Barriers
	§501.29 Policies for Development in State Parks, Wildlife Management Areas or Preserves
	§501.30 Policies for Alteration of Coastal Historic Areas
	§501.31 Policies for Transportation Projects
X	§501.32 Policies for Emission of Air Pollutants
	§501.33 Policies for Appropriations of Water
	§501.34 Policies for Levee and Flood Control Projects

Please explain how the proposed project is consistent with the applicable enforceable policies identified above. Please use additional sheets if necessary. *For example: If you are constructing a pier with a covered boathouse, then the applicable enforceable policy is:§501.24 Policies for Construction of Waterfront Facilities and Other Structures on Submerged Lands. The project is consistent because it will not interfere with navigation or natural coastal processes, and it avoids/minimizes shading.*

Enforceable Policy 501.32 - The construction of the proposed project is consistent because it will not affect air quality within the coastal area. Due to the project's low projected air emissions, the applicant will coordinate and secure an air permit via TCEQ Permit By Rule program.

BY SIGNING THIS STATEMENT, THE APPLICANT IS STATING THAT THE PROPOSED ACTIVITY COMPLIES WITH THE TEXAS COASTAL MANAGEMENT PROGRAM AND WILL BE CONDUCTED IN A MANNER CONSISTENT WITH SUCH PROGRAM

Signature of Applicant/Agent Date

Any questions regarding the Texas Coastal Management Program should be referred to:

Allison Buchtien
Texas General Land Office
1001 Texas Clipper Road
PMEC #3027, Room 135
Galveston, Texas 77554
Phone: (409) 741-4057
Fax: (409) 741-4010
Toll Free: 1-866-894-7664
permitting.assistance@glo.texas.gov

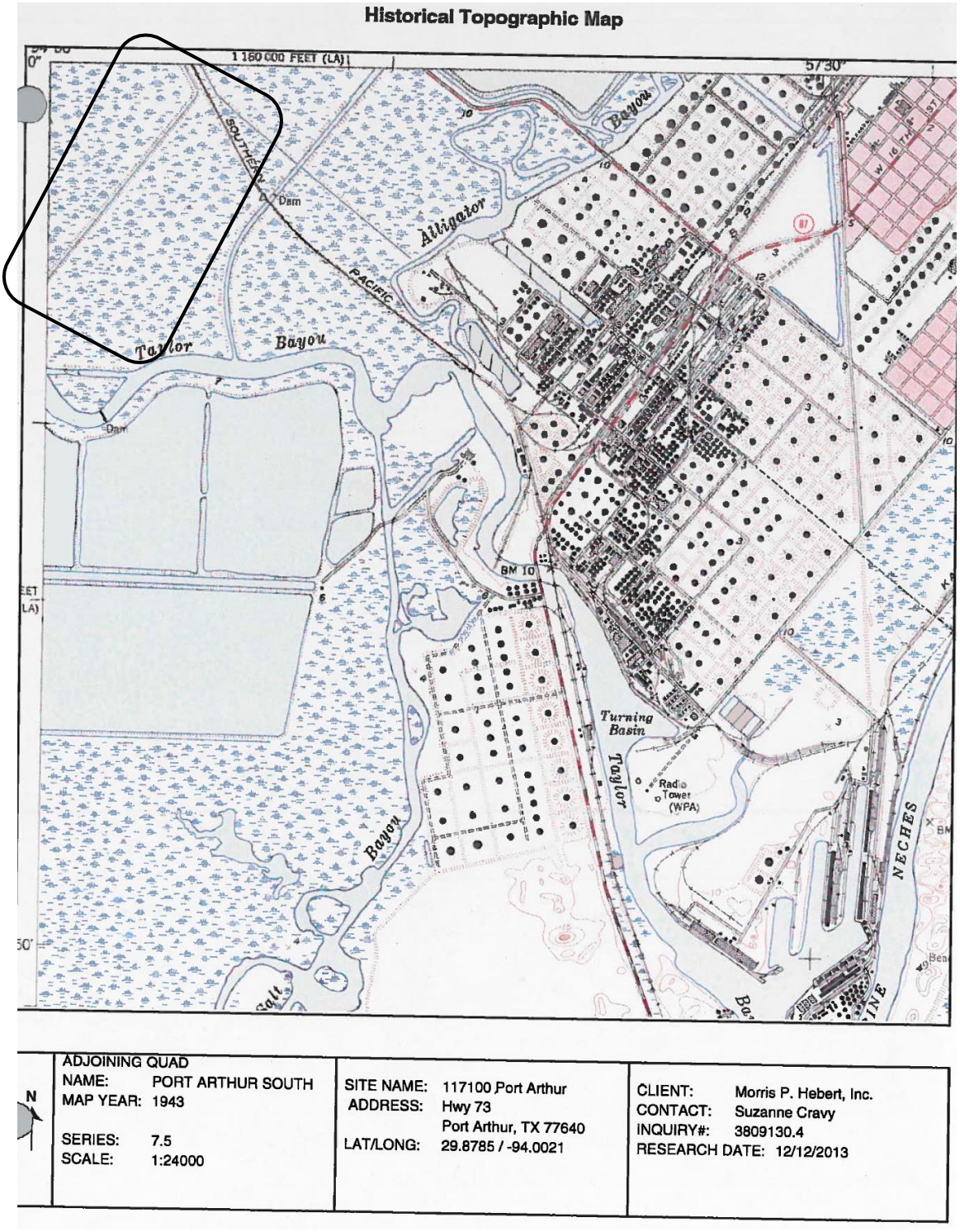
Ray Newby
Texas General Land Office
Coastal Resources Division
1700 North Congress Avenue, Room 330
Austin, Texas 78701-1495
Phone: (512) 475-3624
Fax: (512) 475-0680
Toll Free: 1-800-998-4GLO
ray.newby@glo.texas.gov

Information collected by electronic mail and by web form is subject to the Public Information Act, Chapter 552, Government Code.

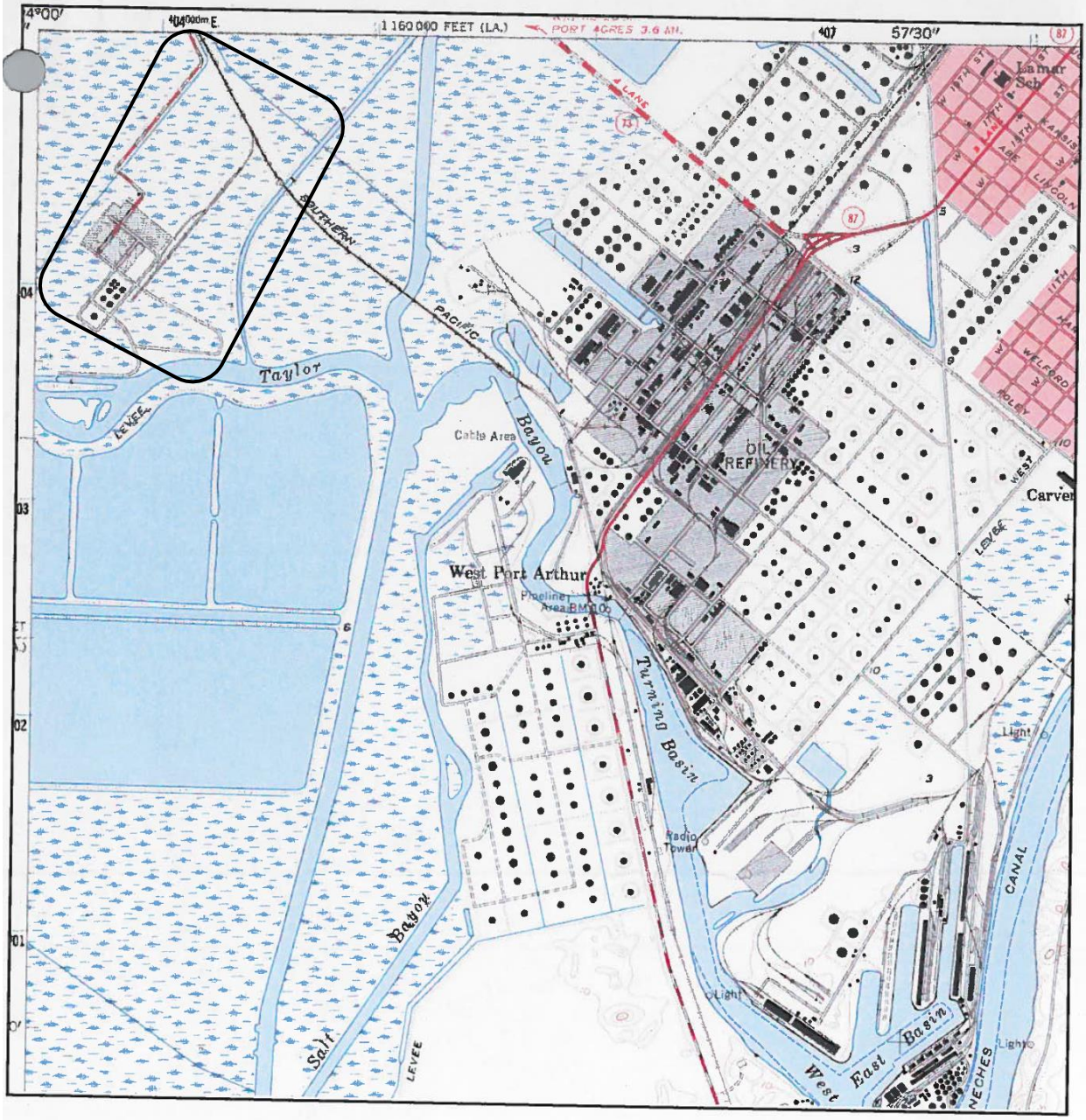
Print Form

APPENDIX F

HISTORICAL TOPOGRAPHICAL MAPS

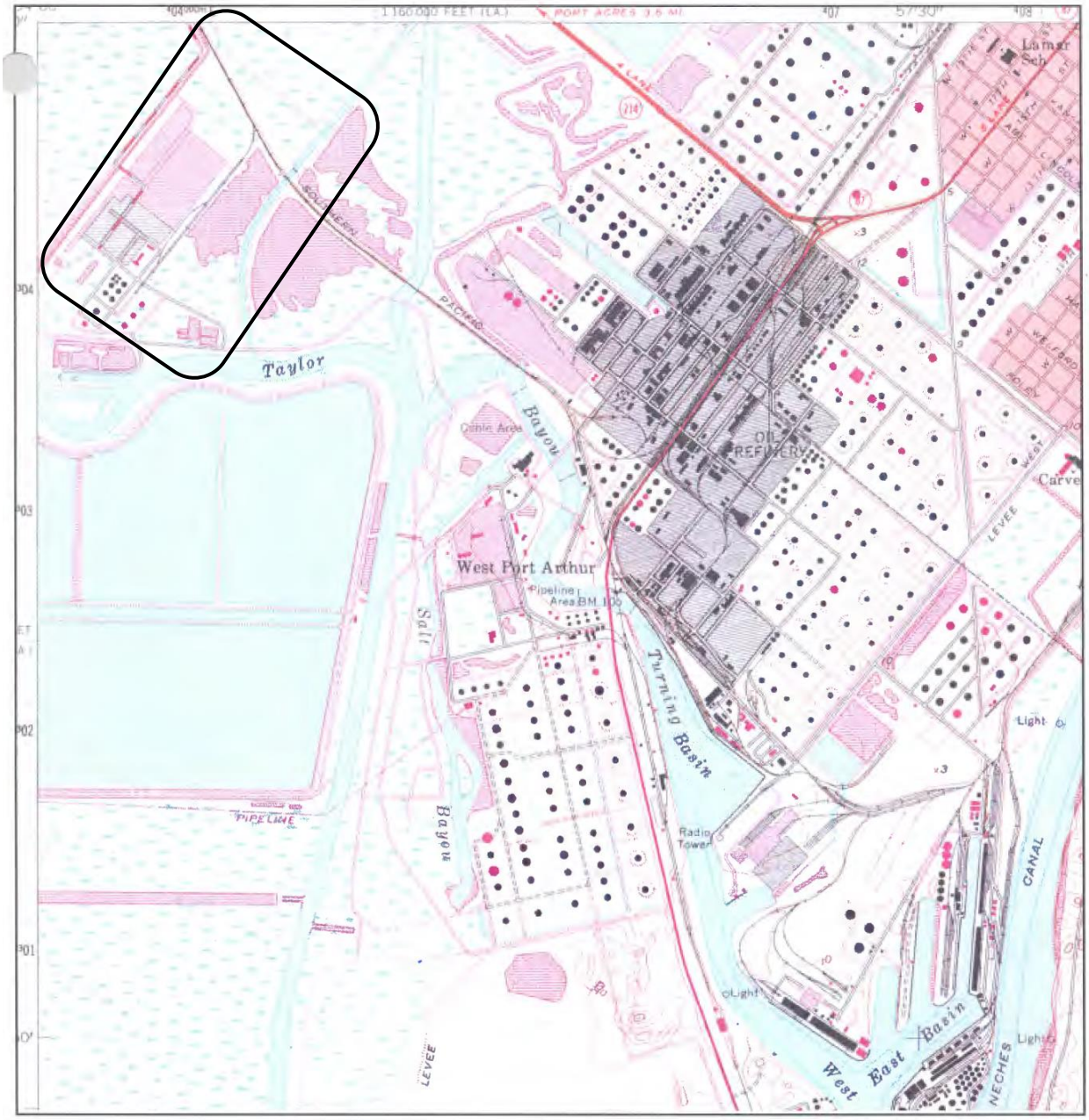


Historical Topographic Map



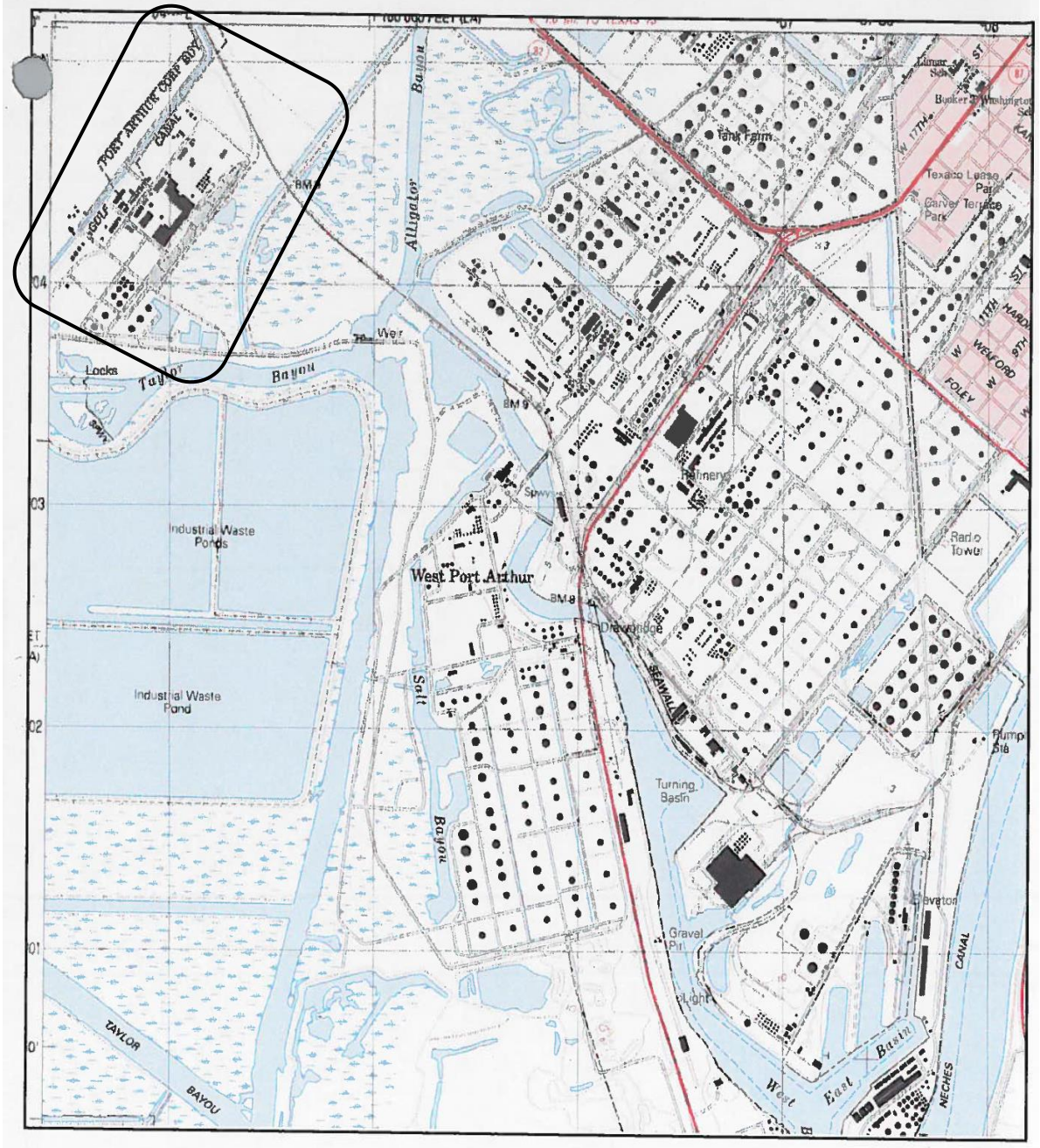
N	ADJOINING QUAD NAME: PORT ARTHUR SOUTH MAP YEAR: 1957 SERIES: 7.5 SCALE: 1:24000	SITE NAME: 117100 Port Arthur ADDRESS: Hwy 73 Port Arthur, TX 77640 LAT/LONG: 29.8785 / -94.0021	CLIENT: Morris P. Hebert, Inc. CONTACT: Suzanne Cravy INQUIRY#: 3809130.4 RESEARCH DATE: 12/12/2013

Historical Topographic Map



N	ADJOINING QUAD NAME: PORT ARTHUR SOUTH MAP YEAR: 1974 PHOTOREVISED FROM :1957 SERIES: 7.5 SCALE: 1:24000	SITE NAME: 117100 Port Arthur ADDRESS: Hwy 73 Port Arthur, TX 77640 LAT/LONG: 29.8785 / -94.0021	CLIENT: Morris P. Hebert, Inc. CONTACT: Suzanne Cravy INQUIRY#: 3809130.4 RESEARCH DATE: 12/12/2013

Historical Topographic Map



APPENDIX G

TEXAS HISTORICAL COMMISSION – NATIONAL HISTORIC PRESERVATION ACT CORRESPONDENCE

HOUSTON, TX OFFICE
10101 Southwest Freeway
Suite 620
Houston, TX 77074
Phone: 713-219-1470
TX Survey Firm Registration: 10142100
TX Engineering Firm Registration: F-8039

Morris P. Hebert, Inc.
client focused solutions
http://www.mphinc.com

OFFICE LOCATIONS
Houma, LA – Corporate Office
San Antonio, TX
Baton Rouge, LA
Clinton, NJ

November 21, 2014

RECEIVED
NOV 26 2014
Texas Historical Commission

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711-2276

Mr. Wolfe;

Emerald Biofuels, LLC has tasked Morris P. Hebert, Inc. (MPH) to conduct a Phase I cultural resources survey of a proposed project area within Port Arthur, Jefferson County, Texas, to ascertain whether cultural resources would be adversely affected by the construction of a proposed Integrated Biofuel Production Enterprise (IBPE) at this location. The enclosed document, *A Phase I Cultural Resources Investigation of an 8.5-Acre Parcel for a Proposed Integrated Biofuel Production Enterprise in Port Arthur, Jefferson County, Texas* (Huebchen, 2014) is the result of that investigation. The Department of the Air Force, within the Department of Defense, is responsible for executing programs that ensure domestic production capabilities for technology items that are essential to national defense, under which the proposed action falls. As such, the proposed action constitutes an undertaking under 36 CFR Part 800, and requires compliance with the National Historic Preservation Act. The client has requested that your office review the enclosed copy of the cultural resources report and welcomes any comments as deemed necessary.

It should be noted that two previous submissions have been made to the THC for review of this project; first on 21 February, 2014 and then again on 21 March, 2014. These documents had similar titles; the first was called *A Phase I Cultural Resources Survey for a Proposed Integrated Biofuel Production Enterprise in Port Arthur, Jefferson County, Texas* (Huebchen, 2013), while the second was entitled *A Phase I Cultural Resources Survey of a 21-acre Parcel for a Proposed Integrated Biofuel Production Enterprise in Port Arthur, Jefferson County, Texas* (Huebchen, 2014). Since those submissions, the proposed project location had been moved, and so a new survey was conducted, and documentation is being resubmitted for THC review.

Should you have any questions or require additional information please contact me at (713) 219-1470 or (713) 219-4401 (direct), or at khuebchen@mphinc.com. Please submit any written correspondence to the address provided above.

PROPERTIES AFFECTED
PROJECT MAY PROCEED
by
for Mark Wolfe
State Historic Preservation Officer
Date 12/5/14
Track#

Sincerely,
MORRIS P. HEBERT, INC.

Karl R. Huebchen
Principal Investigator / Cultural Resources Project Manager

DRAFT REPORT
ACCEPTABLE

APPENDIX H

TRIBAL CORRESPONDENCE

Marie Taylor

From: CRABILL, JOHN A DR-03 USAF AFMC AFRL/RXME <john.crabill@us.af.mil>
Sent: Tuesday, February 03, 2015 1:20 PM
To: Trey Fleming; Marie Taylor
Subject: FW: Advanced Drop-in Biofuels Production Project, Jefferson Co, TX

From: Lindsey Bilyeu [mailto:bilyeu@choctawnation.com]
Sent: Thursday, March 06, 2014 2:14 PM
To: ASSINK, WARREN J CIV USAF AFMC AFRL/RXSC; CRABILL, JOHN A DR-03 USAF AFMC AFRL/RXME
Subject: RE: Advanced Drop-in Biofuels Production Project, Jefferson Co, TX

Mr. Assink and Mr. Crabill,

The Choctaw Nation of Oklahoma thanks the Department of the Air Force for the correspondence regarding the above referenced project. Jefferson Co, TX lies outside of the Choctaw Nation of Oklahoma's area of historic interest. The Choctaw Nation Historic Preservation Department respectfully defers to the other Tribes that have been contacted. If you have any questions, please contact our office at 580-924-8280 ext. 2631.

Thank You,

Lindsey Bilyeu
NHPA Section 106 Reviewer
Choctaw Nation of Oklahoma
Historic Preservation Department
P.O. Box 1210
Durant, OK 74702
580-924-8280 Ext. 2631

TONKAWA TRIBE OF OKLAHOMA
NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT
• 1 RUSH BUFFALO ROAD, TONKAWA, OKLAHOMA 74653 •
• PHONE (580) 628-2561 • FAX: (580) 628-9903 •
WEB SITE: www.tonkawatribe.com

Dear Sir or Madam,

Regarding your proposed projects, the Tonkawa Tribe of Indians of Oklahoma submits the following:

The Tonkawa Tribe has no specifically designated historical or cultural sites identified in the above listed project area. However if any human remains, funerary objects, or other evidence of historical or cultural significance is inadvertently discovered then the Tonkawa Tribe would certainly be interested in proper disposition thereof.

We appreciate notification by your office of the many projects on-going, and as always the Tonkawa Tribe is willing to work with your representatives in any manner to uphold the provisions of NAGPRA to the extent of our capability.

Respectfully,

Miranda "Nax'ce" Myer
NAGPRA Representative

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

10 FEB 2014

MEMORANDUM FOR K. SICKEY, CHAIRMAN
ADMINISTRATIVE BUILDING
COUSHATTA TRIBE OF LOUISIANA
1940 C.C. BEL ROAD
ELTON LA 70532

FROM: AFRL/RX
2977 Hobson Way, Rm 400
Wright-Patterson AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. I am writing to you on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in the GT Omniport complex in Jefferson County, near Port Arthur, Texas. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this letter is to initiate government-to-government consultation and to request assistance from the Coushatta Tribe of Louisana in determining if any significance is involved at the proposed site.

2. The potential ADBPP facility site is located between the Texas Route 82 and 73 clover-leaf and the 57th Street levy southwest of Port Arthur. The Area of Potential Effect (APE) is approximately 20 acres in pasture land adjacent to the GTO complex internal rail infrastructure. I have attached a Program Introduction (Attachment 1) and site maps (Attachment 2) to assist in explaining the proposed effort and its rationale and expected impacts. At this time, we have no indication of previously documented historic properties of any kind being present in the APE.

3. Because the information we seek is technical in nature, I propose that members of our staffs handle further consultation on this project. Mr. Warren Assink, AFRL/RXSC, warren.assink@us.af.mil, (937) 255-3480, and Mr. John Crabill, AFRL/RXME, john.crabill@us.af.mil, (937) 904-4390 are coordinating the AFRL Environmental Assessment to ensure that the tribe's comments and concerns are addressed. When this assessment is available for public comment, we will provide a copy for Tribal review and comments.

4. Please feel free to call me at (937) 255-4726 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

JOHN W. GLOYSTEIN, Colonel, USAF
Acting Director
Materials and Manufacturing Directorate

2 Attachments:
1. Program introduction
2. Proposed site maps

cc:
Ms. L. Langley, Coushatta Tribe of Louisiana

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

10 FEB 2014

MEMORANDUM FOR R. THOMAS, CHAIRMAN
ALABAMA-COUSHATTA TRIBES OF TEXAS
571 STATE PARK ROAD 56
LIVINGSTON TX 77351

FROM: AFRL/RX
2977 Hobson Way, Rm 400
Wright-Patterson AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. I am writing to you on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in the GT Omniport complex in Jefferson County, near Port Arthur, Texas. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this letter is to initiate government-to-government consultation and to request assistance from the Alabama-Coushatta Tribes of Texas in determining if any significance is involved at the proposed site.

2. The potential ADBPP facility site is located between the Texas Route 82 and 73 clover-leaf and the 57th Street levy southwest of Port Arthur. The Area of Potential Effect (APE) is approximately 20 acres in pasture land adjacent to the GTO complex internal rail infrastructure. I have attached a Program Introduction (Attachment 1) and site maps (Attachment 2) to assist in explaining the proposed effort and its rationale and expected impacts. At this time, we have no indication of previously documented historic properties of any kind being present in the APE.

3. Because the information we seek is technical in nature, I propose that members of our staffs handle further consultation on this project. Mr. Warren Assink, AFRL/RXSC, warren.assink@us.af.mil, (937) 255-3480, and Mr. John Crabill, AFRL/RXME, john.crabill@us.af.mil, (937) 904-4390 are coordinating the AFRL Environmental Assessment to ensure that the tribe's comments and concerns are addressed. When this assessment is available for public comment, we will provide a copy for Tribal review and comments.

4. Please feel free to call me at (937) 255-4726 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

JOHN W. GLOYSTEIN, Colonel, USAF
Acting Director
Materials and Manufacturing Directorate

2 Attachments:
1. Program introduction
2. Proposed site maps

cc:
Mr. Bryant Celestine, Alabama-Coushatta Tribes of Texas

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

10 FEB 2014

MEMORANDUM FOR R. TWOHATCHETT, CHAIRMAN
KIOWA INDIAN TRIBE OF OKLAHOMA
P.O. BOX 369
CARNEGIE OK 73015-0369

FROM: AFRL/RX
2977 Hobson Way, Rm 400
Wright-Patterson AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. I am writing to you on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in the GT Omniport complex in Jefferson County, near Port Arthur, Texas. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this letter is to initiate government-to-government consultation and to request assistance from the Kiowa Indian Tribe of Oklahoma in determining if any significance is involved at the proposed site.

2. The potential ADBPP facility site is located between the Texas Route 82 and 73 clover-leaf and the 57th Street levy southwest of Port Arthur. The Area of Potential Effect (APE) is approximately 20 acres in pasture land adjacent to the GTO complex internal rail infrastructure. I have attached a Program Introduction (Attachment 1) and site maps (Attachment 2) to assist in explaining the proposed effort and its rationale and expected impacts. At this time, we have no indication of previously documented historic properties of any kind being present in the APE.

3. Because the information we seek is technical in nature, I propose that members of our staffs handle further consultation on this project. Mr. Warren Assink, AFRL/RXSC, warren.assink@us.af.mil, (937) 255-3480, and Mr. John Crabill, AFRL/RXME, john.crabill@us.af.mil, (937) 904-4390 are coordinating the AFRL Environmental Assessment to ensure that the tribe's comments and concerns are addressed. When this assessment is available for public comment, we will provide a copy for Tribal review and comments.

4. Please feel free to call me at (937) 255-4726 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

JOHN W. GLOWSTEIN, Colonel, USAF
Acting Director
Materials and Manufacturing Directorate

2 Attachments:
1. Program introduction
2. Proposed site maps

cc:
Ms. A. Tah-Bone, Kiowa Indian Tribe of Oklahoma

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUN 0 6 2014

MEMORANDUM FOR R. THOMAS, CHAIRMAN
ALABAMA-COUSHATTA TRIBES OF TEXAS
571 STATE PARK ROAD 56
LIVINGSTON, TX 77351

FROM: AFRL/RXME, DEFENSE PRODUCTION ACT TITLE III
2977 HOBSON WAY RM215
WRIGHT-PATTERSON AFB OH 45433-7734

SUBJECT: National Historical Preservation Act (NHPA) Section 106 Consultation

1. In reference to 10 Feb 2014 memo (National Historical Preservation Act (NHPA) Section 106 Consultation), I am writing to you on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in the GT Omniport complex in Jefferson County, near Port Arthur, Texas. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this follow-up letter is to make sure you received the government-to-government consultation requesting assistance from the Alabama-Coushatta Tribes in determining if any significance is involved at the proposed site.

2. The potential ADBPP facility site is located between the Texas Route 82 and 73 clover-leaf and the 57th Street levy southwest of Port Arthur. The Area of Potential Effect (APE) is approximately 20 acres in pasture land adjacent the GTO complex internal rail infrastructure. At this time we have no indication of previously documented historic properties of any kind being present in the APE.

3. Because the information we seek is technical in nature, I propose that members of your staff handle further consultation on this project. Mr. Warren Assink, AFRL/RXSC, warren.assink@us.af.mil, (937) 255-3480, is coordinating and Mr. John Crabill, AFRL/RXME, john.crabill@us.af.mil, (937) 904-4390, is the Government Project Manager, and they are coordinating the Air Force Research Laboratory (AFRL) Environmental Assessment to ensure that the tribe's comments and concerns are addressed. Request your response by 20 Jun 2014. When this assessment is available for public comment we will provide a copy for Tribal review and comments.

4. Please feel free to call me at (937) 904-4374 if you have any questions or if your staff runs into issues that they cannot resolve or which warrant our personal involvement. Thank you for your assistance.

Sincerely,

JAMES A. NEELY, Deputy Program Manager
Defense Production Act Title III Program
Materials and Manufacturing Directorate

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUN 0 6 2014

MEMORANDUM FOR G. PYLE, CHAIRMAN
CHOCTAW NATION OF OKLAHOMA
P.O. DRAWER 1210, 529 N. 16TH STREET
DURANT OK 74702-1210

FROM: AFRL/RXME, DEFENSE PRODUCTION ACT TITLE III
2977 HOBSON WAY RM 215
WRIGHT-PATTERSON AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. In reference to 10 Feb 2014 memo (National Historical Preservation Act (NHPA) Section 106 Consultation), I am writing to you on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in the GT Omniport complex in Jefferson County, near Port Arthur, Texas. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this follow-up letter is to make sure you received the government-to-government consultation requesting assistance from the Choctaw Nation of Oklahoma in determining if any significance is involved at the proposed site.

2. The potential ADBPP facility site is located between the Texas Route 82 and 73 clover-leaf and the 57th Street levy southwest of Port Arthur. The Area of Potential Effect (APE) is approximately 20 acres in pasture land adjacent to the GTO complex internal rail infrastructure. At this time we have no indication of previously documented historic properties of any kind being present in the APE.

3. Because the information we seek is technical in nature, I propose that members of your staff handle further consultation on this project. Mr. Warren Assink, AFRL/RXSC, warren.assink@us.af.mil, (937) 255-3480, and Mr. John Crabill, AFRL/RXME, john.crabill@us.af.mil, (937) 904-4390, are coordinating the Air Force Research Laboratory (AFRL) Environmental Assessment to ensure that the tribe's comments and concerns are addressed. Request your response by 20 June 2014. When this assessment is available for public comment we will provide a copy for Tribal review and comments.

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUN 0 6 2014

MEMORANDUM FOR K. SICKEY, CHAIRMAN
ADMINISTRATIVE BUILDING
COUSHATTA TRIBE OF LOUISIANA
1940 C.C. BEL ROAD
ELTON LA 70532

FROM: AFRL/RXME, DEFENSE PRODUCTION ACT TITLE III
2977 HOBSON WAY RM 215
WRIGHT-PATTERSON AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

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2. The potential ADBPP facility site is located between the Texas Route 82 and 73 clover-leaf and the 57th Street levy southwest of Port Arthur. The Area of Potential Effect (APE) is approximately 20 acres in pasture land adjacent to the GTO complex internal rail infrastructure. At this time we have no indication of previously documented historic properties of any kind being present in the APE.

3. Because the information we seek is technical in nature, I propose that members of your staff handle further consultation on this project. Mr. Warren Assink, AFRL/RXSC, warren.assink@us.af.mil, (937) 255-3480, and Mr. John Crabill, AFRL/RXME, john.crabill@us.af.mil, (937) 904-4390, are coordinating the Air Force Research Laboratory (AFRL) Environmental Assessment to ensure that the tribe's comments and concerns are addressed. Request your response by 20 June 2014. When this assessment is available for public comment we will provide a copy for Tribal review and comments.

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUN 0 6 2014

MEMORANDUM FOR R. TWOHATCHETT, CHAIRMAN
KIOWA INDIAN TRIBE OF OKLAHOMA
P.O. BOX 369
CARNEGIE OK 73015-0369

FROM: AFRL/RXME, DEFENSE PRODUCTION ACT TITLE
2977 HOBSON WAY RM 215
WRIGHT-PATTERSON AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

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2. The potential ADBPP facility site is located between the Texas Route 82 and 73 clover-leaf and the 57th Street levy southwest of Port Arthur. The Area of Potential Effect (APE) is approximately 20 acres in pasture land adjacent to the GTO complex internal rail infrastructure. At this time we have no indication of previously documented historic properties of any kind being present in the APE.

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DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AIR FORCE BASE OHIO 45433

JUN 0 6 2014

MEMORANDUM FOR D. PATTERSON, PRESIDENT
TONKAWA TRIBE OF INDIANS OF OKLAHOMA
1 RUSH BUFFALO ROAD
TONKAWA OK 73653

FROM: AFRL/RXME, DEFENSE PRODUCTION ACT TITLE III
2977 HOBSON WAY RM 215
WRIGHT-PATTERSON AFB OH 45433-7734

SUBJECT: National Historical Preservation Act Section 106 Consultation

1. In reference to 10 Feb 2014 memo (National Historical Preservation Act (NHPA) Section 106 Consultation), I am writing to you on behalf of the U.S. Air Force in connection with the proposed "Advanced Drop-in Biofuels Production Project" (ADBPP) that may be constructed in the GT Omniport complex in Jefferson County, near Port Arthur, Texas. Section 101(d)(6)(B) of the National Historical Preservation Act (NHPA) of 1966 and 36 CFR §800.2(c)(2)(ii) require Federal agencies to consult with any Indian tribe that attaches religious and cultural significance to historic properties that might be affected by an agency's actions. The purpose of this follow-up letter is to make sure you received the government-to-government consultation requesting assistance from the Tonkawa Tribe of Indians of Oklahoma in determining if any significance is involved at the proposed site.

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APPENDIX I

OTHER AGENCY CORRESPONDENCE

CHAPTER 8
REFERENCES

Brown, P. 2014. Personal Communication regarding Land Use and Zoning for the City of Port Arthur, Texas in March 2014.

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Kalnes, T., Marker, T. (UOP), Shonnard, D., and Koers, K. 2008. "Green diesel production by hydrorefining renewable feedstocks".Biofuels Technology, Issue 4, 2008, pp 7-11.

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